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Ms. Nancy T. Duerring, P.G.
Land Recycling Section
Pennsylvania Department of Environmental Protection
Environmental Cleanup and Brownfields Program
230 Chestnut Street
Meadville, Pennsylvania 16335

Subject:
Surface-Water/Sediment Sampling Report
South Branch of Bear Creek
Beazer/INDSPEC Properties Site
Petrolia, Butler County, Pennsylvania

Date:
August 26, 2015

Contact:
Mark B. Hanish

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Our ref:
B0039303.0000

Dear Ms. Duerring:

On behalf of the Beazer East, Inc. (Beazer) and INDSPEC Chemical Corporation (INDSPEC), ARCADIS U.S., Inc. (ARCADIS) provides the following Surface-Water/Sediment Sampling Report (Report) to the Pennsylvania Department of Environmental Protection (PADEP) for the above-referenced site located in Petrolia, Pennsylvania (**Figure 1**). This Report describes surface-water and sediment sampling activities conducted in accordance with the *Surface-Water/Sediment Sampling Work Plan* submitted to PADEP on May 1, 2014 and approved by PADEP in a May 27, 2014 e-mail from Ms. Nancy Duerring of PADEP to Mr. Mark Hanish of ARCADIS. The surface-water and sediment sampling outlined in this Report was conducted to supplement the surface-water and sediment data reported in the *Remedial Investigation Report* (RIR) submitted by Langan Engineering and Environmental Services, Inc. (Langan), on behalf of Beazer and INDSPEC, in June 2013. The activities and findings of the sampling are described below.

Surface-Water Sampling

The surface-water sampling program was designed to provide a more current understanding of surface-water quality under conditions subsequent to placement of the Aquablok® cap within a portion of the South Branch of Bear Creek (Creek) located within the facility boundary. Surface-water samples were collected in the same locations that previous samples were collected within the Creek.

Sampling was initiated based on consultation of on-line local rainfall data from a nearby weather station (Weather Underground Weather Station ID: KPABUTLE3 in Butler, Pennsylvania) and concurrent consultation of real-time data from the two nearest local stream gauging stations that were determined to be the best suited analogs for showing current and predicted stage conditions for the Creek. The following two stream gauging stations were consulted:

- United States Geological Survey (USGS) Gauging Station 03049000 on Buffalo Creek near Freeport, Pennsylvania

- USGS Gauging Station 03106300 on Muddy Creek near Portersville, Pennsylvania

ARCADIS conducted one sampling event from September 3 through 5, 2014, and a second sampling event on December 3 and 4, 2014. Rainfall conditions leading up to, through, and immediately following the sampling events are summarized in **In-Text Table 1**.

In-Text Table 1
Measured Rainfall (Inches)

Date	Butler, Pennsylvania Weather Station ID: KPABUTLE3 N 40 ° 53 ' 27 ", W 79 ° 54 ' 0 "	Onsite Rain Gauge
Aug. 30, 2014	0.00	0.00
Aug. 31, 2014	0.74	0.36
Sep. 1, 2014	0.01	0.00
Sep. 2, 2014	0.12	0.07
Sep. 3, 2014	**0.00**	**0.01**
Sep. 4, 2014	**0.00**	**0.01**
Sep. 5, 2014	**0.00**	**0.01**
Nov. 29, 2014	0.00	0.05
Nov. 30, 2014	0.00	0.00
Dec. 1, 2014	0.09	0.03
Dec. 2, 2014	0.13	0.13
Dec. 3, 2014	**0.01**	**0.02**
Dec. 4, 2014	**0.00**	**0.00**
Dec. 5, 2014	0.29	0.30

Note: Bold entries indicate sampling dates.

Although there was some rainfall observed in the area immediately prior to the September 2014 sampling event (see in-text table below), the analog gauging stations indicated that the stage at those locations were at a summer-time low. Due to concerns for potentially missing an opportunity to obtain samples during relatively low-flow conditions, the sampling team mobilized. There was less rainfall prior to the December 2014 sampling event (averaging 0.05 inch in the 2 days prior to collecting the samples). Stream gauge height for onsite Staff Gauge 1 were recorded as presented in **In-Text Table 2**. Flows presented in **In-Text Table 2** are based on a stream hydrograph analysis performed by Langan that established gauge height/flow relationships over a period from January 8, 2011 through September 7, 2012.

In-Text Table 2
Staff Gauge and Steam Flow Measurements

Date	Staff Gauge 1 Reading (feet)	Volumetric Flow (cfs)
9/2/2014	0.85	6.07
9/3/2014	0.85	6.07
9/4/2014*	0.825	5.37
9/5/2014	0.80	4.71
12/3/2014	0.80	4.71
12/4/2014	0.81	4.97
12/8/2014	1.35	27.35
12/9/2014	1.20	19.72
12/10/2014	1.11	15.59
12/15/2014	0.90	7.59
12/19/2014	1.00	11.09

Notes:
* = interpolated value
cfs = cubic feet per second

Samples were collected in accordance with ARCADIS Standard Operating Procedures (SOPs) for surface-water sampling. Samples were collected in a downstream-to-upstream sequence to minimize potential disturbance of sediments into the water column. During the December 2014 event, due to limited plant access hours, samples were collected at the offsite locations in a downstream-to-upstream sequence on December 3, 2014, and at the onsite locations in a downstream-to-upstream sequence on December 4, 2014.

Fifteen surface-water samples were collected from the Creek at the locations depicted on **Figure 2**. Of the previous locations sampled, only SG-9 was not resampled due to its close proximity to surface-water sample SW-1, which was resampled. Therefore, surface-water samples were collected from three locations upstream of the facility, seven locations within the facility boundary, and five locations downstream of the facility. Coordinates were established for each sampling location, and those locations were fixed in the field by a global positioning system (GPS). The re-established field locations were checked against the observed location of existing staff gauges as an independent confirmation of sampling locations.

Samples were collected using a dedicated sampler and directly transferred to laboratory-supplied sampling containers. Samples were preserved in accordance with the methods stipulated for the compounds of concern (COCs) and shipped under chain of custody documentation to TestAmerica Laboratories in Pittsburgh, Pennsylvania; Canton, Ohio; Tallahassee, Florida; and Burlington, Vermont (as

directed by the laboratory contact) for analyses of the COCs listed in **Table 1**. The COC list is identical to that provided in Table 6 of the RIR, except for metals.

At each sample location, water quality parameters (dissolved oxygen, temperature, conductivity, and pH) were measured using a handheld water quality meter (Horiba U-22).

Sediment Sampling

Three sediment samples were collected at the locations depicted on **Figure 2**, with these locations coincident with the three most downstream surface-water sampling locations. These sediment samples were collected concurrently with both surface-water sampling events. The second round of sediment samples were collected due to poor method extraction recovery values reported by the laboratory for the samples collected and analyzed during the first sampling event. In addition, due to laboratory error, samples collected during the second event were not initially analyzed for phenol. Therefore, additional sediment samples were collected during a third sediment sampling (January 29, 2015) specifically for the analysis of phenol.

Sediment samples were collected in accordance with the ARCADIS SOP for sediment sample collection, from downstream-to-upstream, and were directly transferred to laboratory-supplied sampling containers. Samples were preserved in accordance with the methods stipulated for theses COCs and shipped under chain of custody documentation to TestAmerica Laboratories in Pittsburgh, Pennsylvania; Canton, Ohio; Tallahassee Florida; and Burlington, Vermont for analyses of the COCs listed in **Table 2**.

Surveying

The surface-water and sediment sample locations were horizontally located via GPS methods and referenced the Pennsylvania State Plane Coordinate system. **Figure 2** presents sample locations.

Data Validation/Data Usability

Following receipt of surface-water and sediment data from the laboratory, the data was validated in accordance with the procedures outlined in the RIR. In addition, a data usability evaluation was also performed. Select COCs in sediment sample results were qualified as rejected (R) due to quality assurance/quality control issues identified during validation and, therefore, are considered unusable. All other data were considered usable. Laboratory analytical reports, data validation summaries, and the data usability report are provided as **Attachment 1**.

Surface-Water Sampling Results

Table 1 summarizes the surface-water sample results from the September and December 2014 sampling events. Results were compared to Pennsylvania Water Quality Standards of Criteria for Continuous Concentrations (CCC), Criteria for Continuous Concentration (CMC), and Human Health Criteria (HHC), similar to comparisons that were completed in the RIR. Many results were non-detect (ND), as shown in Table 1. All detected concentrations were below their respective CCC, CMC, and HHC.

Sediment Sampling Results

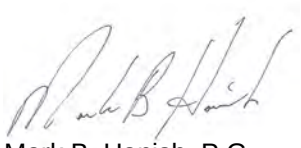
Table 2 summarizes the sediment sample results for the September 2014, December 2014, and January 2015 (phenol only) sampling events. Similar to the RIR, results were compared to their respective United States Environmental Protection Agency lowest effect levels (LEL). None of the COCs had a published severe effect level. Sample results were ND or detected at concentrations below LELs, with the exception of carbon disulfide in the duplicate sample of SED-101 and sample SED-103 (December 2014 sampling event), which were above the LEL (0.851 micrograms per kilogram). These detections were qualified as estimated (J) and are considered anomalous based on the September 2014 sample results from these locations and the sample results from all other locations.

Conclusions

Surface-water and sediment samples were collected at historical sample locations in the Creek during two 2014 sampling events. Sample results were low to ND, with no results above their respective criteria, with the exception of carbon disulfide in two samples during one event.

With the addition of these surface-water and sediment datasets, we believe that there is adequate sediment and surface-water data to finalize the RIR and Risk Assessment.

If you have any questions, please contact me at 724.742.9180 ext. 518.
Sincerely,



Mark B. Hanish, P.G.
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Project Manager

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John O'Hara, Pennsylvania Department of Environmental Protection
Griff Miller, United States Environmental Protection Agency
Jane Patarcity, Beazer East, Inc.
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Attachments:
Table 1 – Summary of Surface-Water Sample Analytical Results
Table 2 - Summary of Sediment Sample Analytical Results

Figure 1 – Site Location Map
Figure 2 – Surface-Water/Sediment Sampling Locations

Attachment 1 – Laboratory Analytical Data Packages, Data Validation Summaries and Data Usability Report

Tables

Table 1
Summary of Surface-Water Sample Analytical Results

Surface-Water/Sediment Sampling Report
Beazer/INDSPEC Properties
Petrolia, Pennsylvania

Location ID: / Date Collected:	PAWQS-CCC	PAWQS-CMC	PAWQS-HHC	Units	SG-1 09/05/14	SG-1 12/04/14	SG-2 09/05/14	SG-2 12/04/14	SG-3 09/05/14	SG-3 12/04/14	SG-4 09/05/14	SG-4 12/04/14	SG-5 09/04/14	SG-5 12/03/14	SG-6 09/04/14	SG-6 12/04/14	SG-7 09/04/14	SG-7 12/03/14	SG-8 09/05/14	SG-8 12/04/14	SH-1 09/05/14
Volatile Organics																					
1,1,1-Trichloroethane	610	3,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	210	1,000	0.17	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	680	3,400	0.59	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1,500	7,500	33	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	26	130	35	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	160	820	420	µg/L	1 U	1 U	**1.2**	**0.69 J**	**1.9**	**1.5 [1.4]**	**1.6 [1.8]**	**1.1**	**1.4**	**1.0**	1 U	1 U	**1.1**	**0.83 J**	**2.6**	**1.0**	1 U
1,2-Dichloroethane	3,100	15,000	0.38	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis) (DCE)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (trans)	1,400	6,800	140	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	2,200	11,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	69	350	420	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	- -	- -	- -	µg/L	1 U	1 UJ	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	150	730	420	µg/L	1 U	1 U	1 U	1 U	**0.36 J**	**0.27 J [0.29 J]**	**0.36 J [0.38 J]**	**0.25 J**	**0.32 J**	**0.23 J**	1 U	1 U	**0.23 J**	1 U	**0.64 J**	1 U	1 U
2-Butanone (Methyl ethyl ketone)	32,000	230,000	21,000	µg/L	5 U	5 U	5 U	5 U	**0.69 J**	5 U [5 U]	5 U [5 U]	5 U	5 U	5 U	**0.84 J**	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	5,000	26,000	- -	µg/L	5 U	5 U	5 U	5 U	5 U	5 U [5 U]	5 U [5 U]	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone (2-propanone)	86,000	450,000	3,500	µg/L	5.9 UB	5 U	6.3 UB	5 U	7.2 UB	**3.2 J** [5 U]	5.4 UB [5.5 UB]	5 U	8.3 UB	**3.4 J**	12 UB	5 U	6.3 UB	**4.1 J**	19 UB	**3.1 J**	5.7 UB
Benzene	130	640	1.2	µg/L	**0.13 J**	1 U	**0.11 J**	1 U	**0.17 J**	**0.11 J** [1 U]	**0.12 J [0.15 J]**	1 U	1 U	1 U	**0.28 J**	1 U	1 U	1 U	**0.15 J**	1 U	**0.11 J**
Bromodichloromethane	- -	- -	0.55	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	370	1,800	4.3	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane (Methyl bromide)	110	550	47	µg/L	1 U	1 UJ	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	560	2,800	0.23	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	240	1,200	130	µg/L	1 U	1 U	**0.34 J**	**0.18 J**	**1.1**	**0.98 J [0.97 J]**	**0.88 J [1.1]**	**0.75 J**	**0.66 J**	**0.63 J**	1 U	1 U	**0.43 J**	**0.49 J**	**2.1**	**0.65 J**	1 U
Chloroethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	390	1,900	5.7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane (Methyl chloride)	5,500	28,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	- -	- -	0.4	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon 12)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethyl ether	- -	- -	- -	µg/L	1 U	1 U	**0.31 J**	**0.17 J**	**1.0**	**1.6 [1.6]**	**1.5 [0.9 J]**	**1.1**	**2.4**	**5.8**	**0.11 J**	1 U	**6.1**	**12**	**1.1**	**0.49 J**	**0.2 J**
Ethylbenzene	580	2,900	530	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Butyl Ketone (2-Hexanone)	4,300	21,000	- -	µg/L	5 U	5 U	5 U	5 U	5 U	5 U [5 U]	5 U [5 U]	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl cyclohexane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-Butyl Ether (MTBE)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2,400	12,000	4.6	µg/L	1 UJ	1 UJ	1 UJ	1 U	1 UJ	1 U [1 U]	1 UJ [1 UJ]	1 UJ	1 UJ	1 U	1 U	1 UJ	1 UJ	1 U	1 UJ	1 U	1 UJ
Styrene	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	140	700	0.69	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	330	1,700	1,300	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	450	2,300	2.5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Freon 11)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	- -	- -	0.025	µg/L	1 U	1 U	1 U	1 U	1 U	1 U [1 U]	1 U [1 U]	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Specialty Compounds																					
2,3',4-Trihydroxydiphenyl	- -	- -	- -	µg/L	50 U	50 U	50 U	50 U	50 U	50 U [50 U]	50 U [50 U]	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzenesulfonic acid	1,200,000	2,000,000	- -	µg/L	50 U	50 U	50 UJ	50 U	50 U	**27 J [20 J]**	**54 [51]**	**23 J**	50 U	**13 J**	50 UJ	50 U	50 U	50 U	50 U	50 U	50 UJ
Formaldehyde	440	2,200	700	µg/L	**9 J**	50 UB	**7.8 J**	50 UB	50 U	50 UB [50 UB]	**9.7 J** [50 U]	50 UB	**14 J**	50 UB	50 U	50 UB	50 U	50 UB	**8.1 J**	50 UB	**15 J**
m-Benzenedisulfonic acid	1,600,000	2,600,000	- -	µg/L	**120**	**81**	**110**	**88**	**3,100 D**	**3,100 [2,600]**	**3,700 D [3,200 D]**	**2,700**	**2,400 D**	**2,300**	**130**	**81**	**1,900 D**	**440**	**1,000 D**	**190**	**110**
p-Phenolsulfonic acid	1,400,000	3,500,000	- -	µg/L	50 U	50 U	50 U	50 U	**180**	**160 [160 J]**	**150 [240]**	**220**	**120**	**210**	50 U	50 U	**120**	**45 J**	**550**	**94**	50 U
Resorcinol	7,200	28,000	2,700	µg/L	50 U	50 U	50 U	**390**	50 U	**440 [430]**	50 U [50 U]	**420**	50 U	**170**	50 U	50 U	50 U	50 U	**300**	**540**	50 U
Semivolatile Organics																					
Phenol	- -	- -	10,400	µg/L	NA	0.93 U	NA	0.93 U	NA	0.93 U [0.93 U]	NA	0.93 U	NA	0.93 U	NA	0.93 U	NA	0.93 U	NA	**0.5 J**	NA
Miscellaneous																					
Sulfate	- -	- -	- -	mg/L	**93**	**74**	**95**	**74**	**95**	**82 [80]**	**92 [93]**	**79**	**98**	**78**	**89**	**75**	**99**	**79**	**98**	**77**	**90**

Notes:
Bold results indicate a detected value.
Bold and shaded results indicate a result or MDL greater than the human health criteria established in PA Code Title 25, Chapter 93.8c.
Bold and double underline results indicate a result or MDL is greater than the fish and aquatic life CMC criteria established in PA Code Title 25, Chapter 93.8c.
Bold and single underline results indicate a result or MDL is greater than the fish and aquatic life CCC criteria established in PA Code Title 25, Chapter 93.8c.

- - = no applicable screening criteria available
[ ] = duplicate sample
CCC = Criteria Continuous Concentration
CMC = Criteria Maximum Concentration
HHC = Human Health Criteria
MDL = method detection limit
mg/L = milligrams per liter
NA = not analyzed
PAWQS = Pennsylvania Water Quality Standard
µg/L = micrograms per liter

Data Qualifiers:
D = Concentration is based on a diluted sample analysis.
J = Compound present. Reported result may not be accurate or precise.
U = Compound analyzed but not detected at a level greater than or equal to the MDL.
UB = Compound considered non-detect at the listed value due to associated blank contamination.
UJ = The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

Table 1
Summary of Surface-Water Sample Analytical Results

Surface-Water/Sediment Sampling Report
Beazer/INDSPEC Properties
Petrolia, Pennsylvania

Location ID: / Date Collected:	PAWQS-CCC	PAWQS-CMC	PAWQS-HHC	Units	SH-1 12/04/14	SW-1 09/05/14	SW-1 12/04/14	SW-1 LANGAN 09/04/14	SW-1_LANGAN 12/04/14	SW-2 LANGAN 09/04/14	SW-2_LANGAN 12/04/14	SW-3 LANGAN 09/04/14	SW-3_LANGAN 12/03/14	SW-4 LANGAN 09/04/14	SW-4_LANGAN 12/03/14	SW-5 LANGAN 09/04/14	SW-5_LANGAN 12/03/14
Volatile Organics																	
1,1,1-Trichloroethane	610	3,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	210	1,000	0.17	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	680	3,400	0.59	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	1,500	7,500	33	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	26	130	35	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	160	820	420	µg/L	1 U	**1.7**	**0.7 J**	1 U	1 U	1 U	1 U	**0.94 J**	**0.76 J**	**0.89 J**	**0.75 J**	**0.91 J**	**0.63 J**
1,2-Dichloroethane	3,100	15,000	0.38	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (cis) (DCE)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloroethene (trans)	1,400	6,800	140	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichloropropane	2,200	11,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	69	350	420	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (cis)	- -	- -	- -	µg/L	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichloropropene (trans)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	150	730	420	µg/L	1 U	**0.3 J**	1 U	1 U	1 U	1 U	1 U	**0.22 J**	1 U	1 U	1 U	1 U	1 U
2-Butanone (Methyl ethyl ketone)	32,000	230,000	21,000	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	5,000	26,000	- -	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone (2-propanone)	86,000	450,000	3,500	µg/L	5 U	8.8 UB	5 U	5.9 UB	5 U	9.7 UB	5 U	14 UB	**3.8 J**	16 UB	**2.6 J**	12 UB	**2.5 J**
Benzene	130	640	1.2	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	- -	- -	0.55	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	370	1,800	4.3	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromomethane (Methyl bromide)	110	550	47	µg/L	1 UJ	1 U	1 U	1 U	1 UJ	1 U	1 UJ	1 U	1 U	1 U	1 U	1 U	1 U
Carbon disulfide	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Carbon tetrachloride	560	2,800	0.23	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chlorobenzene	240	1,200	130	µg/L	1 U	**0.7 J**	**0.32 J**	1 U	1 U	1 U	1 U	**0.35 J**	**0.42 J**	**0.32 J**	**0.45 J**	**0.32 J**	**0.34 J**
Chloroethane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	390	1,900	5.7	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane (Methyl chloride)	5,500	28,000	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Cyclohexane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dibromochloromethane	- -	- -	0.4	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Dichlorodifluoromethane (Freon 12)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethyl ether	- -	- -	- -	µg/L	**0.1 J**	**0.54 J**	**0.26 J**	1 U	1 U	1 U	1 U	**5.5**	**13**	**6.6**	**8.1**	**7.9**	**8.6**
Ethylbenzene	580	2,900	530	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene (Cumene)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl Acetate	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 UJ	1 U	1 U	1 U	1 U
Methyl Butyl Ketone (2-Hexanone)	4,300	21,000	- -	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl cyclohexane	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methyl tert-Butyl Ether (MTBE)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene chloride	2,400	12,000	4.6	µg/L	1 UJ	1 UJ	1 U	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 U	1 U	1 U	1 U
Styrene	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene (PCE)	140	700	0.69	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	330	1,700	1,300	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene (TCE)	450	2,300	2.5	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane (Freon 11)	- -	- -	- -	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl chloride	- -	- -	0.025	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Specialty Compounds																	
2,3',4-Trihydroxydiphenyl	- -	- -	- -	µg/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzenesulfonic acid	1,200,000	2,000,000	- -	µg/L	50 U	50 UJ	50 U	50 UJ	50 U	50 UJ	50 U	50 U	**12 J**	50 U	50 U	50 U	50 U
Formaldehyde	440	2,200	700	µg/L	50 UB	**14 J**	50 UB	**7 J**	50 UB	**5.5 J**	50 UB	50 U	50 U	50 U	50 U	50 U	50 U
m-Benzenedisulfonic acid	1,600,000	2,600,000	- -	µg/L	**90**	**100**	**88**	**130**	**81**	**130**	**86**	**1,700 D**	**2,300**	**1,300 D**	**550**	**1,300 D**	**890**
p-Phenolsulfonic acid	1,400,000	3,500,000	- -	µg/L	50 U	50 U	50 U	50 U	50 U	50 U	50 U	**70**	**270**	50 U	**73 J**	50 U	**97**
Resorcinol	7,200	28,000	2,700	µg/L	**350**	50 U	**450**	50 U	50 U	50 U	50 U	50 U	**21 J**	50 U	50 U	50 UJ	50 U
Semivolatile Organics																	
Phenol	- -	- -	10,400	µg/L	0.93 U	NA	0.93 U	NA	0.93 U	NA	0.93 U	NA	0.93 U	NA	0.93 U	NA	0.93 U
Miscellaneous																	
Sulfate	- -	- -	- -	mg/L	**74**	**92**	**75**	**89**	**75**	**93**	**75**	**100**	**84**	**99**	**83**	**94**	**84**

Notes:
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HHC = Human Health Criteria
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Data Qualifiers:
D = Concentration is based on a diluted sample analysis.
J = Compound present. Reported result may not be accurate or precise.
U = Compound analyzed but not detected at a level greater than or equal to the MDL.
UB = Compound considered non-detect at the listed value due to associated blank contamination.
UJ = The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

Table 2
Summary of Sediment Sample Analytical Results

Surface-Water/Sediment Sampling Report
Beazer/INDSPEC Properties
Petrolia, Pennsylvania

Location ID: / Date Collected:	LEL	SEL	Units	SED-101 09/04/14	SED-101 12/03/14	SED-101 01/29/15	SED-102 09/04/14	SED-102 12/03/14	SED-102 01/29/15	SED-103 09/04/14	SED-103 12/03/14	SED-103 01/29/15
Volatile Organics												
Ethyl ether	NS	NS	µg/kg	**0.66 J** [5.7 U]	**11 [13]**	NA	**1.6 J**	6.8 U	NA	**40**	**8.1**	NA
1,1,1-Trichloroethane	30.2[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,1,2,2-Tetrachloroethane	1,360[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 UJ	NA	6.5 U	5.8 U	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,1,2-Trichloroethane	1,240[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,1-Dichloroethane	0.575[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,1-Dichloroethene	31[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,2,4-Trichlorobenzene	2,100[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 UJ	6.8 UJ	NA	6.5 U	5.8 U	NA
1,2-Dibromo-3-chloropropane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 UJ	6.8 U	NA	6.5 U	5.8 U	NA
1,2-Dibromoethane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,2-Dichlorobenzene	18,900[g]	NS	µg/kg	5.5 U [5.7 U]	**1.3 J [2.1 J]**	NA	7.4 UJ	**3 J**	NA	6.5 U	5.8 U	NA
1,2-Dichloroethane	260[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,2-Dichloroethene (cis) (DCE)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,2-Dichloroethene (trans)	1,050[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,2-Dichloropropane	333[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,3-Dichlorobenzene	4,430[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 UJ	6.8 U	NA	6.5 U	5.8 U	NA
1,3-Dichloropropene (cis)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
1,3-Dichloropropene (trans)	NS	NS	µg/kg	5.5 U [5.7 U]	6 UJ [6.3 UJ]	NA	7.4 U	6.8 UJ	NA	6.5 U	5.8 UJ	NA
1,4-Dichlorobenzene	18,900[g]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 UJ	6.8 U	NA	6.5 U	5.8 U	NA
2-Butanone (Methyl ethyl ketone)	42.4[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
4-Methyl-2-pentanone (MIBK)	25.1[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Acetone (2-propanone)	9.9[d]	NS	µg/kg	22 U [23 U]	24 U [25 U]	NA	29 UB	27 U	NA	26 U	23 U	NA
Benzene	141.57[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	**17 J**	NA	6.5 U	5.8 U	NA
Bromodichloromethane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Bromoform	654[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 UJ	NA	6.5 U	5.8 U	NA
Bromomethane (Methyl bromide)	1.37[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Carbon disulfide	0.851[c]	NS	µg/kg	5.5 U [5.7 U]	6 U **[1.5 J]**	NA	7.4 U	6.8 U	NA	6.5 U	**1.4 J**	NA
Carbon tetrachloride	64.2[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Chlorobenzene	13,800[g]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	**2.3 J**	NA	6.5 U	5.8 U	NA
Chloroethane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Chloroform	121[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Chloromethane (Methyl chloride)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Cyclohexane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	**37 J**	**11 J**	NA	6.5 U	5.8 U	NA
Dibromochloromethane	1,114[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Dichlorodifluoromethane (Freon 12)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Ethylbenzene	1,100[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	**2.2 J**	**3.1 J**	NA	6.5 U	5.8 U	NA
Isopropylbenzene (Cumene)	86[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	**2.8 J**	**2 J**	NA	6.5 U	5.8 U	NA
Methyl Acetate	NS	NS	µg/kg	5.5 U [5.7 U]	6 UJ [6.3 UJ]	NA	7.4 U	6.8 UJ	NA	6.5 U	5.8 UJ	NA
Methyl Butyl Ketone (2-Hexanone)	58.2[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Methyl cyclohexane	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	**100**	**48 J**	NA	6.5 U	5.8 U	NA
Methyl tert-Butyl Ether (MTBE)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Methylene chloride	159[d]	NS	µg/kg	5.5 U [5.7 U]	6 UB [6.3 UB]	NA	7.4 U	6.8 UB	NA	6.5 U	6.1 UB	NA
Styrene	559[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Tetrachloroethene (PCE)	468[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Toluene	1,220[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Trichloroethene (TCE)	96.9[c]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Trichlorofluoromethane (Freon 11)	NS	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Vinyl chloride	202[d]	NS	µg/kg	5.5 U [5.7 U]	6 U [6.3 U]	NA	7.4 U	6.8 U	NA	6.5 U	5.8 U	NA
Specialty Compounds												
2,3',4-Trihydroxydiphenyl	NS	NS	µg/kg	R [R]	R [R]	NA	R	R	NA	R	R	NA
Benzenesulfonic acid	NS	NS	µg/kg	20 UJ [19 UJ]	**850 DJ [870 D]**	NA	**33 J**	20 UJ	NA	20 UJ	R	NA
Formaldehyde	NS	NS	µg/kg	**390 [690]**	**1,100 J [560 J]**	NA	**130**	**1,100 J**	NA	**510**	**270**	NA
m-Benzenedisulfonic acid	NS	NS	µg/kg	**140 J [160 J]**	**85,000 D [85,000 D]**	NA	**5,000 D**	**400**	NA	**340 J**	R	NA
p-Phenolsulfonic acid	NS	NS	µg/kg	R [R]	**7,200 DJ [7,400 D]**	NA	20 U	20 UJ	NA	20 U	R	NA
Resorcinol	NS	NS	µg/kg	R [R]	R [390 UJ]	NA	R	R	NA	R	R	NA
Semivolatile Organics												
Phenol	420[c]	NS	µg/kg	NA	NA	42 U	NA	NA	170 UJ [820 UJ]	NA	NA	**10 J**
Miscellaneous												
Percent Moisture	NS	NS	%	8.8 [12]	16 [20]	21	32	27	20 [34]	23	14	21
Percent Solids	NS	NS	%	91 [88]	84 [80]	79	68	73	80 [66]	77	86	79
Sulfate	NS	NS	mg/kg	**59 J [120 J]**	**1,600 [1,500]**	NA	**2,500**	**140**	NA	**68**	**290**	NA

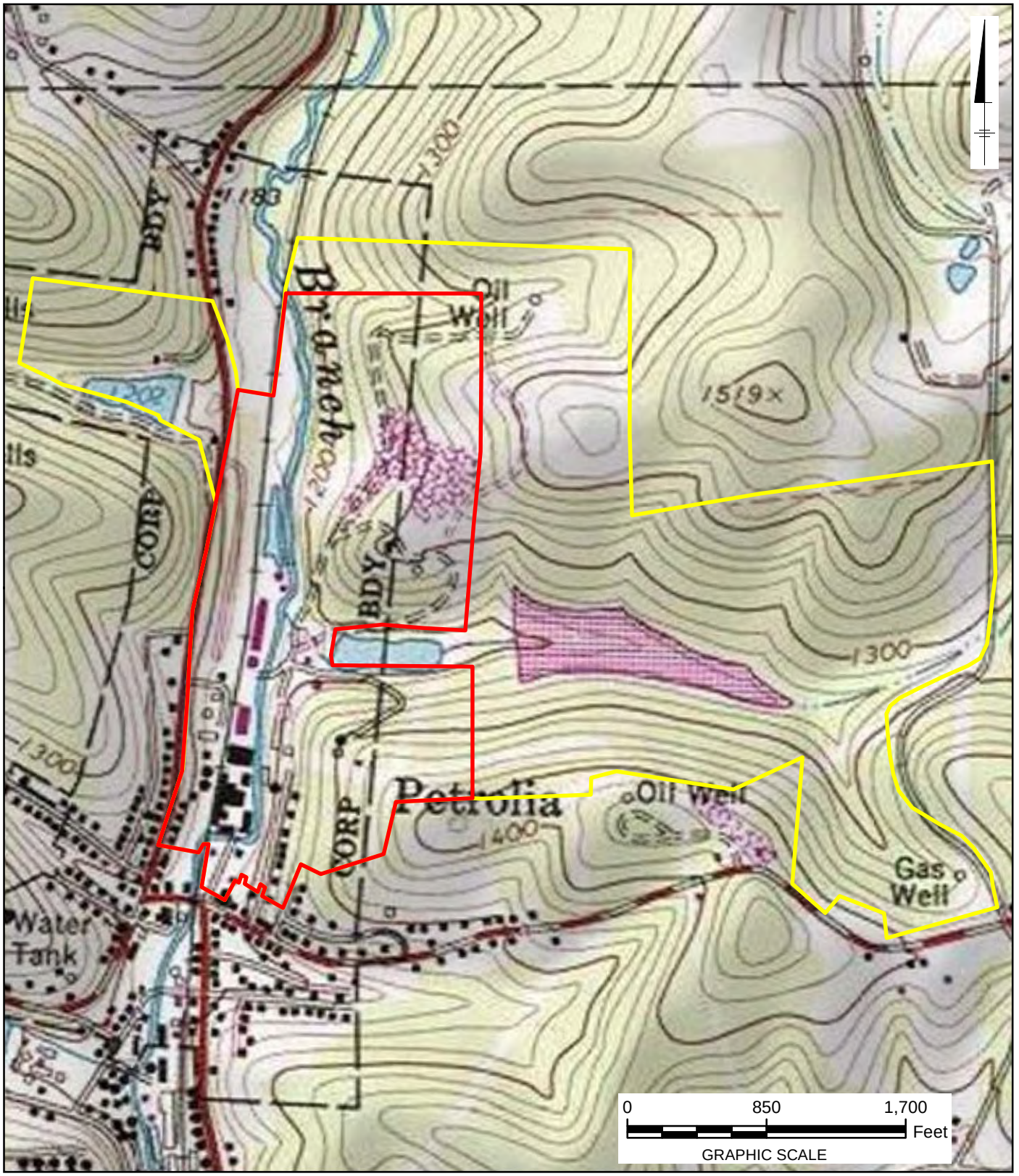
Notes:
Bold and shaded results indicates the value is greater than the LEL criteria (as defined by the hierarchy below.
Bold results indicate a detected value.

[ ] = duplicate sample
% = percent
AOI = area of interest
BTAG = Biological Technical Assistance Group
ERL = effects range low
LEL = low effect level
MDL = method detection limit
mg/kg = milligrams per kilogram
NA = not analyzed
NS = no standard currently available
NOAA = National Oceanic and Atmospheric Administration
PAH = polycyclic aromatic hydrocarbon
SEL = severe effect level
TOC = total organic carbon
µg/kg = micrograms per kilogram
USEPA = United States Environmental Protection Agency

The hierarchy for selecting the SEL:
a. Calculated Site-Specific SEL.
b. Ontario Sediment SEL (if no Site-Specific SEL is available).
The hierarchy for selecting the LEL:
c. USEPA Region 3 BTAG Freshwater Sediment Screening Values; Criteria for PAHs calculated using AOI-specific TOC values.
d. SD EPA R5 Sediment Benchmark (if no USEPA Region 3 BTAG is available).
e. Ontario LEL (if no SD EPA R5 Benchmark is available).
f. NOAA ERL Sediment Benchmark (if no Ontario Sediment LEL is available).
g. Narcosis-based equilibrium-partitioning sediment benchmark calculated using AOI-specific TOC values per USEPA 2008.

Data Qualifiers:
D = Concentration is based on a diluted sample analysis.
J = Compound present. Reported result may not be accurate or precise.
U = Compound analyzed but not detected at a level greater than or equal to the MDL.
R = Result rejected during validation.
UB = Compound considered non-detect at the listed value due to associated blank contamination.
UJ = The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.
* = Laboratory duplicate analysis was outside control limits.

Figures



LEGEND:

- ACT 2 SITE BOUNDARY
- FACILITY SITE BOUNDARY

NOTES:

1. USGS QUADRANGLE MAP IMAGE OBTAINED FROM THE ESRI SOFTWARE IMAGE SERVICE LICENSE.

BEAZER/INDSPEC PROPERTIES

PETROLIA, PENNSYLVANIA

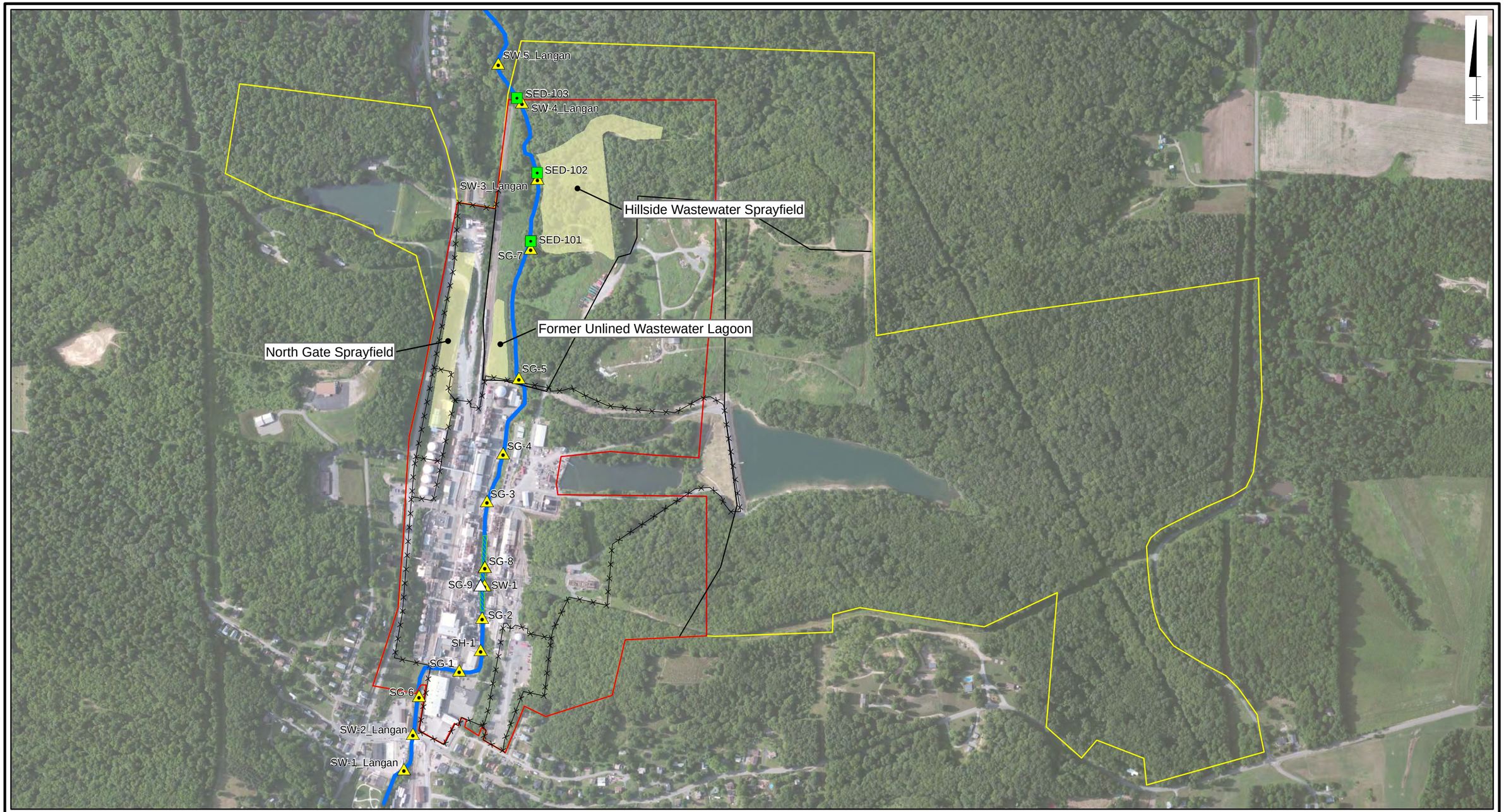
SURFACE-WATER/SEDIMENT SAMPLING REPORT

SITE LOCATION MAP

ARCADIS

FIGURE 1

City: SYR Div/Group: SWG Created By: K.IVES Last Saved By: kives
Q:\Beazer\Petrolia, PA\SW_Sed_SamplingReport\mxd\SiteLocationMap.mxd 2/26/2015 4:21:46 PM



LEGEND:

- SEDIMENT SAMPLING LOCATIONS IN BEAR CREEK
- SURFACE WATER SAMPLING LOCATIONS IN BEAR CREEK
- 'HISTORICAL SURFACE WATER SAMPLING LOCATION (NOT SAMPLED IN 2014)
- AREAS OF INTEREST
- FENCE
- SOUTH BRANCH BEAR CREEK
- AREA OF PLANNED CAP REPAIR
- ACT 2 SITE BOUNDARY
- FACILITY SITE BOUNDARY

NOTES:
1. IMAGERY OBTAINED FROM THE ESRI SOFTWARE IMAGE SERVICE LICENSE.

0 550 1,100 Feet
GRAPHIC SCALE

BEAZER/INDSPEC PROPERTIES
PETROLIA, PENNSYLVANIA
SURFACE-WATER/SEDIMENT SAMPLING REPORT

SURFACE-WATER/SEDIMENT SAMPLING LOCATIONS

ARCADIS

FIGURE 2

City: SYR Div/Group: SWG Created By: K.IVES Last Saved By: kives
Q:\Beazer\Petrolia, PA\SW_Sed_Sampling\Report\mxd\SW_Sed_SamplingLocations.mxd 2/26/2015 4:06:08 PM

Attachment 1

Laboratory Analytical Data Packages, Data Validation Summaries and Data Usability Report

Laboratory Data Analytical Packages

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-36441-1
Client Project/Site: INDSPEC, Petrolia PA

For:
ARCADIS U.S. Inc
6041 Wallace Road Extension
Suite 300
Wexford, Pennsylvania 15090

Attn: Chris Bonessi

Veronica Bortot

Authorized for release by:
10/9/2014 4:00:12 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 180-36441-1

Laboratory: TestAmerica Pittsburgh

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: INDSPEC, Petrolia PA

Report Number: 180-36441-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 9/6/2014 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.1º C and 3.2º C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples SW-5 LANGAN (180-36441-1), SW-4 LANGAN (180-36441-3), SW-3 LANGAN (180-36441-5), SG-7 (180-36441-7), SG-5 (180-36441-8), SG-6 (180-36441-9), SW-2 LANGAN (180-36441-10), SW-1 LANGAN (180-36441-11), SG-4 (180-36441-13), SG-3 (180-36441-14), SG-8 (180-36441-15), SW-1 (180-36441-16), SG-2 (180-36441-17), SH-1 (180-36441-18), SG-1 (180-36441-19), EB090514 (180-36441-20), DUP090514 (180-36441-21) and TRIP BLANKS (180-36441-22) were analyzed for 8260C in accordance with 8260. The samples were analyzed on 09/14/2014, 09/15/2014 and 09/16/2014.

Samples SED-103 (180-36441-2), SED-102 (180-36441-4), SED-101 (180-36441-6) and DUP090414 (180-36441-12) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260. The samples were analyzed on 09/08/2014.

The laboratory control sample (LCS) for batch 117276 recovered outside control limits for the following analytes: Chloroethane, Bromomethane, and Carbon Tetrachloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Internal standard (ISTD) response for TBA-d9 for the following sample(s) was outside acceptance criteria: SED-102 (180-36441-4), SED-102 (180-36441-4 MSD), SED-103 (180-36441-2). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

Internal standard responses were outside of acceptance limits for the following sample(s): SED-102 (180-36441-4), SED-102 (180-36441-4 MS), SED-102 (180-36441-4 MSD). The sample(s) shows evidence of matrix interference. Inteernal Standard 1,4-Dichlorobenzene-d4 recovered low. Matrix issue is confirmed by analysis of MS/MSD which has concurring results.

1,2,4-Trichlorobenzene failed the recovery criteria low for the MS of sample SED-102MS (180-36441-4) in batch 180-117276. Several analytes failed the recovery criteria high.

Several analytes failed the recovery criteria high for the MSD of sample SED-102MSD (180-36441-4) in batch 180-117276

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 180-36441-1 (Continued)

Laboratory: TestAmerica Pittsburgh (Continued)

ANIONS

Samples SW-5 LANGAN (180-36441-1), SW-4 LANGAN (180-36441-3), SW-3 LANGAN (180-36441-5), SG-7 (180-36441-7), SG-5 (180-36441-8), SG-6 (180-36441-9), SW-2 LANGAN (180-36441-10), SW-1 LANGAN (180-36441-11), SG-4 (180-36441-13), SG-3 (180-36441-14), SG-8 (180-36441-15), SW-1 (180-36441-16), SG-2 (180-36441-17), SH-1 (180-36441-18), SG-1 (180-36441-19), EB090514 (180-36441-20) and DUP090514 (180-36441-21) were analyzed for 300 in accordance with 300. The samples were analyzed on 09/17/2014.

Samples SW-5 LANGAN (1)[5X], SW-4 LANGAN (3)[5X], SW-3 LANGAN (5)[5X], SG-7 (7)[5X], SG-5 (8)[5X], SG-6 (9)[5X], SW-2 LANGAN (10)[5X], SW-1 LANGAN (11)[5X], SG-4 (13)[5X], SG-3 (14)[5X], SG-8 (15)[5X], SW-1 (16)[5X], SG-2 (17)[5X], SH-1 (18)[5X], SG-1 (19)[5X] and DUP090514 (21)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The following client QC samples (orig/MS/MSD) had heterogenous sample matrices, which could potentially lead to failing percent recoveries and rpd.
SED-102 (180-36441-4), SED-102 (180-36441-4 MS), SED-102 (180-36441-4 MSD)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

FORMALDEHYDE

Samples SG-4 (180-36441-13), SG-3 (180-36441-14), SG-8 (180-36441-15), SW-1 (180-36441-16), SG-2 (180-36441-17), SH-1 (180-36441-18), SG-1 (180-36441-19), EB090514 (180-36441-20) and DUP090514 (180-36441-21) were analyzed for formaldehyde in accordance with EPA SW-846 Method 8315A. The samples were prepared on 09/07/2014 and analyzed on 09/09/2014.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page

SULFONIC ACIDS

Samples SW-5 LANGAN (180-36441-1), SW-4 LANGAN (180-36441-3), SW-3 LANGAN (180-36441-5), SG-7 (180-36441-7), SG-5 (180-36441-8), SG-6 (180-36441-9), SW-2 LANGAN (180-36441-10), SW-1 LANGAN (180-36441-11), SG-4 (180-36441-13), SG-3 (180-36441-14), SG-8 (180-36441-15), SW-1 (180-36441-16), SG-2 (180-36441-17), SH-1 (180-36441-18), SG-1 (180-36441-19), EB090514 (180-36441-20) and DUP090514 (180-36441-21) were analyzed for Sulfonic Acids in accordance with Sulfonic Acids LCMS. The samples were prepared on 09/08/2014 and analyzed on 09/09/2014, 09/10/2014, 09/11/2014 and 09/12/2014.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following samples associated with batch 76950 were above control limits for 2,3',4-Trihydroxydiphenyl: SED-102 (180-36441-3 MS), SED-102 (180-36441-5 MS), SED-102 (180-36441-7 MS), SED-102 (180-36441-8 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria. Matrix interference is suspected.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following samples associated with batch 76950 were outside control limits for 2,3',4-Trihydroxydiphenyl and Benzensulfonic Acid: SED-102 (180-36441-9 MS), SED-102 (180-36441-10 MS), SED-102 (180-36441-11 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The low-level laboratory control sample (LLCS) associated with batch 76937 recovered below control limits for Benzenesulfonic Acid. It is suspected that the preparation/filtration affected the recovery for this analyte. The mid-level LCS passes; therefore the data have been reported.

SED-102 (LLCS 200-76937/2-A)

Due to the high concentration of m-Benzenedisulfonic Acid, the matrix spike / matrix spike duplicate (MS/MSD) for batch 76937 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Due to the high concentration of m-Benzenedisulfonic Acid, the matrix spike/matrix spike duplicate (MS/MSD) for batch 76950 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The matrix spike (MS) recoveries for the following sample associated with batch 76937 were outside control limits for 2,3',4-Trihydroxydiphenyl, Benzenesulfonic Acid, m-Benzenedisulfonic Acid, and Resorcinol: SED-102 (180-36441-2 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

Job ID: 180-36441-1 (Continued)

Laboratory: TestAmerica Pittsburgh (Continued)

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with batch 76937 were outside control limits for 2,3'4-Trihydroxydiphenyl, Benzenesulfonic Acid, Resorcinol, and p-Phenolsulfonic Acid: SED-102 (180-36441-4 MS), SED-102 (180-36441-4 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike (MS) recoveries for the following sample associated with batch 76937 were outside control limits: SED-102 (180-36441-6 MS), SED-102 (180-36441-12 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike (MS) recoveries for the following sample associated with batch76950 were outside control limits for 2,3',4-Trihydroxydiphenyl: SED-102 (180-36441-19 MS), SED-102 (180-36441-21 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike/matrix spike duplicate (MS/MSD) recoveries for the following sample associated with batch 76950 were outside control limits for 2,3',4-Trihydroxydiphenyl: SED-102 (180-36441-13 MS), SED-102 (180-36441-13 MSD), SED-102 (180-36441-14 MS), SED-102 (180-36441-15 MS), SG-4 (180-36441-13 MS), SG-4 (180-36441-13 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike (MS) recoveries for the following sample associated with batch 76950 were outside control limits for 2,3'4-Trihydroxydiphenyl and Benzenesulfonic Acid: SED-102 (180-36441-16 MS), SED-102 (180-36441-17 MS), SED-102 (180-36441-18 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following samples associated with batch 76950 were outside control limits for 2,3',4-Trihydroxydiphenyl and Resorcinol: SED-102 (180-36441-1 MS). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD exceeds the control limits
*	ISTD response or retention time outside acceptable limits
F1	MS and/or MSD Recovery exceeds the control limits

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits

LCMS

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery exceeds the control limits
*	LCS or LCSD exceeds the control limits
E	Result exceeded calibration range.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Laboratory: TestAmerica Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-15

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Burlington

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	68-00489	04-30-15

Laboratory: TestAmerica Tallahassee

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E81005	06-30-15
Georgia	State Program	4		06-30-15
Louisiana	NELAP	6	30663	06-30-15
New Jersey	NELAP	2	FL012	06-30-15
Texas	NELAP	6	T104704459-11-2	03-31-15
USDA	Federal		P330-08-00158	08-05-14 *

* Certification renewal pending - certification considered valid.

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-36441-1	SW-5 LANGAN	Water	09/04/14 11:25	09/06/14 09:15
180-36441-2	SED-103	Solid	09/04/14 12:20	09/06/14 09:15
180-36441-3	SW-4 LANGAN	Water	09/04/14 12:35	09/06/14 09:15
180-36441-4	SED-102	Solid	09/04/14 13:10	09/06/14 09:15
180-36441-5	SW-3 LANGAN	Water	09/04/14 13:20	09/06/14 09:15
180-36441-6	SED-101	Solid	09/04/14 14:00	09/06/14 09:15
180-36441-7	SG-7	Water	09/04/14 14:30	09/06/14 09:15
180-36441-8	SG-5	Water	09/04/14 15:15	09/06/14 09:15
180-36441-9	SG-6	Water	09/04/14 16:00	09/06/14 09:15
180-36441-10	SW-2 LANGAN	Water	09/04/14 16:15	09/06/14 09:15
180-36441-11	SW-1 LANGAN	Water	09/04/14 16:30	09/06/14 09:15
180-36441-12	DUP090414	Solid	09/04/14 00:00	09/06/14 09:15
180-36441-13	SG-4	Water	09/05/14 09:55	09/06/14 09:15
180-36441-14	SG-3	Water	09/05/14 10:30	09/06/14 09:15
180-36441-15	SG-8	Water	09/05/14 11:00	09/06/14 09:15
180-36441-16	SW-1	Water	09/05/14 11:05	09/06/14 09:15
180-36441-17	SG-2	Water	09/05/14 11:45	09/06/14 09:15
180-36441-18	SH-1	Water	09/05/14 12:15	09/06/14 09:15
180-36441-19	SG-1	Water	09/05/14 12:25	09/06/14 09:15
180-36441-20	EB090514	Water	09/05/14 12:30	09/06/14 09:15
180-36441-21	DUP090514	Water	09/05/14 00:00	09/06/14 09:15
180-36441-22	TRIP BLANKS	Water	09/05/14 00:00	09/06/14 09:15

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT
300.0	Anions, Ion Chromatography	MCAWW	TAL PIT
8315A	Carbonyl Compounds (HPLC)	SW846	TAL TAL
In-House	Sulfonic Acids by LCMS/MS	TAL-BUR	TAL BUR
2540G	SM 2540G	SM22	TAL PIT

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-BUR = TestAmerica Laboratories, Burlington, Facility Standard Operating Procedure.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Client Sample ID: SW-5 LANGAN

Lab Sample ID: 180-36441-1

Date Collected: 09/04/14 11:25

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	117991	09/14/14 17:45	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 17:26	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		10	4 mL	4 mL	77000	09/09/14 19:36	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/09/14 22:08	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SED-103

Lab Sample ID: 180-36441-2

Date Collected: 09/04/14 12:20

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 76.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0003 g	5 mL	117277	09/08/14 04:18	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0003 g	5 mL	117276	09/08/14 07:08	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.0932 g	100 mL	118001	09/14/14 12:11	CMR	TAL PIT
Soluble	Analysis	300.0		1	1 mL		117995	09/14/14 16:47	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			10.11 g	20 mL	76937	09/08/14 13:30	MMS	TAL BUR
Total/NA	Analysis	In-House		1	10.11 g	20 mL	77003	09/11/14 08:47	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			117578	09/10/14 09:37	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SW-4 LANGAN

Lab Sample ID: 180-36441-3

Date Collected: 09/04/14 12:35

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	117991	09/14/14 18:09	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 17:41	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		10	4 mL	4 mL	77000	09/09/14 21:06	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/09/14 23:06	CAV	TAL BUR
	Instrument ID: LC3062B									

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SED-102

Lab Sample ID: 180-36441-4

Date Collected: 09/04/14 13:10
Matrix: Solid
Date Received: 09/06/14 09:15
Percent Solids: 68.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0002 g	5 mL	117277	09/08/14 04:18	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0002 g	5 mL	117276	09/08/14 07:30	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			009.9769 g	100 mL	118001	09/14/14 12:11	CMR	TAL PIT
Soluble	Analysis	300.0		5	1 mL		118382	09/17/14 15:21	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			10.16 g	20 mL	76937	09/08/14 13:30	MMS	TAL BUR
Total/NA	Analysis	In-House		20	10.16 g	20 mL	77002	09/11/14 01:38	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			10.16 g	20 mL	76937	09/08/14 13:30	MMS	TAL BUR
Total/NA	Analysis	In-House		1	10.16 g	20 mL	77003	09/11/14 11:46	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			117578	09/10/14 09:37	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SW-3 LANGAN

Lab Sample ID: 180-36441-5

Date Collected: 09/04/14 13:20
Matrix: Water
Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 16:04	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 17:57	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		15	4 mL	4 mL	77000	09/09/14 17:37	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 00:36	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SED-101

Lab Sample ID: 180-36441-6

Date Collected: 09/04/14 14:00
Matrix: Solid
Date Received: 09/06/14 09:15
Percent Solids: 91.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0008 g	5 mL	117277	09/08/14 04:18	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0008 g	5 mL	117276	09/08/14 09:45	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.1260 g	100 mL	118001	09/14/14 12:11	CMR	TAL PIT
Soluble	Analysis	300.0		1	1 mL		117995	09/14/14 17:49	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			10.25 g	20 mL	76937	09/08/14 13:30	MMS	TAL BUR

Client Sample ID: SED-101

Lab Sample ID: 180-36441-6

Date Collected: 09/04/14 14:00

Matrix: Solid

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	In-House		1	10.25 g	20 mL	77003	09/11/14 12:46	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			117578	09/10/14 09:37	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SG-7

Lab Sample ID: 180-36441-7

Date Collected: 09/04/14 14:30

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 16:28	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 18:12	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		15	4 mL	4 mL	77000	09/09/14 18:37	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 01:37	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-5

Lab Sample ID: 180-36441-8

Date Collected: 09/04/14 15:15

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 16:52	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 18:59	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		20	4 mL	4 mL	77000	09/09/14 16:07	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 02:36	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-6

Lab Sample ID: 180-36441-9

Date Collected: 09/04/14 16:00

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	117991	09/14/14 20:10	DLF	TAL PIT

Client Sample ID: SG-6

Lab Sample ID: 180-36441-9

Date Collected: 09/04/14 16:00

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	117991	09/14/14 20:10	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 19:46	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 04:05	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-2 LANGAN

Lab Sample ID: 180-36441-10

Date Collected: 09/04/14 16:15

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 17:15	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 20:01	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 05:05	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-1 LANGAN

Lab Sample ID: 180-36441-11

Date Collected: 09/04/14 16:30

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 17:40	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 20:17	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77000	09/10/14 06:05	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: DUP090414

Lab Sample ID: 180-36441-12

Date Collected: 09/04/14 00:00

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 88.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0006 g	5 mL	117277	09/08/14 04:18	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0006 g	5 mL	117276	09/08/14 09:23	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			009.9873 g	100 mL	118001	09/14/14 12:11	CMR	TAL PIT

Client Sample ID: DUP090414

Lab Sample ID: 180-36441-12

Date Collected: 09/04/14 00:00
Matrix: Solid
Date Received: 09/06/14 09:15
Percent Solids: 88.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Analysis	300.0		1	1 mL		117995	09/14/14 18:05	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	In House			10.30 g	20 mL	76937	09/08/14 13:30	MMS	TAL BUR
Total/NA	Analysis	In-House		1	10.30 g	20 mL	77003	09/11/14 15:35	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			117578	09/10/14 09:37	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SG-4

Lab Sample ID: 180-36441-13

Date Collected: 09/05/14 09:55
Matrix: Water
Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 13:14	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 20:32	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 13:55	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		25	4 mL	4 mL	77003	09/11/14 05:07	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/11/14 19:19	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-3

Lab Sample ID: 180-36441-14

Date Collected: 09/05/14 10:30
Matrix: Water
Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118218	09/16/14 16:07	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 21:19	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 14:31	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		20	4 mL	4 mL	77108	09/11/14 17:20	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR

Client Sample ID: SG-3

Lab Sample ID: 180-36441-14

Date Collected: 09/05/14 10:30

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/11/14 21:48	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-8

Lab Sample ID: 180-36441-15

Date Collected: 09/05/14 11:00

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118218	09/16/14 18:59	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 21:35	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 14:42	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		10	4 mL	4 mL	77108	09/11/14 18:21	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/11/14 22:48	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-1

Lab Sample ID: 180-36441-16

Date Collected: 09/05/14 11:05

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 18:28	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 21:50	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 14:54	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/12/14 00:18	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-2

Lab Sample ID: 180-36441-17

Date Collected: 09/05/14 11:45

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 18:52	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 22:06	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 15:06	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/12/14 01:18	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SH-1

Lab Sample ID: 180-36441-18

Date Collected: 09/05/14 12:15

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 19:16	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 22:52	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 15:18	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77108	09/12/14 02:17	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-1

Lab Sample ID: 180-36441-19

Date Collected: 09/05/14 12:25

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 20:03	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 23:08	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 15:30	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77192	09/12/14 15:37	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: EB090514

Lab Sample ID: 180-36441-20

Date Collected: 09/05/14 12:30

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 20:27	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		1	1 mL		118382	09/17/14 23:24	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 15:53	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77192	09/12/14 16:37	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: DUP090514

Lab Sample ID: 180-36441-21

Date Collected: 09/05/14 00:00

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118218	09/16/14 19:23	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Analysis	300.0		5	1 mL		118382	09/17/14 23:39	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111453	09/07/14 12:10	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 16:05	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		25	4 mL	4 mL	77003	09/11/14 07:07	CAV	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			4 mL	4 mL	76950	09/08/14 12:45	CAV	TAL BUR
Total/NA	Analysis	In-House		5	4 mL	4 mL	77192	09/12/14 17:36	CAV	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: TRIP BLANKS

Lab Sample ID: 180-36441-22

Date Collected: 09/05/14 00:00

Matrix: Water

Date Received: 09/06/14 09:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	118072	09/15/14 13:37	DLF	TAL PIT
	Instrument ID: CHHP6									

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Analyst References:

Lab: TAL BUR

Batch Type: Prep

CAV = Courtney Vuono

MMS = Maggie Stewart

Batch Type: Analysis

CAV = Courtney Vuono

Lab: TAL PIT

Batch Type: Leach

CMR = Carl Reagle

Batch Type: Prep

KLG = Kathy Gordon

Batch Type: Analysis

AB1 = Ashwin Baikadi

CMR = Carl Reagle

DLF = Donald Ferguson

KLG = Kathy Gordon

Lab: TAL TAL

Batch Type: Prep

DNS = Daniel Smith

Batch Type: Analysis

DNS = Daniel Smith

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SW-5 LANGAN
Date Collected: 09/04/14 11:25
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/14/14 17:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/14/14 17:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/14/14 17:45	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/14/14 17:45	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/14/14 17:45	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/14/14 17:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/14/14 17:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/14/14 17:45	1
1,2-Dichlorobenzene	**0.91**	**J**	1.0	0.15	ug/L			09/14/14 17:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/14/14 17:45	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/14/14 17:45	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/14/14 17:45	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/14/14 17:45	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/14/14 17:45	1
2-Hexanone	ND		5.0	0.16	ug/L			09/14/14 17:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/14/14 17:45	1
Acetone	**12**		5.0	2.5	ug/L			09/14/14 17:45	1
Benzene	ND		1.0	0.11	ug/L			09/14/14 17:45	1
Bromoform	ND		1.0	0.19	ug/L			09/14/14 17:45	1
Bromomethane	ND		1.0	0.31	ug/L			09/14/14 17:45	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/14/14 17:45	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/14/14 17:45	1
Chlorobenzene	**0.32**	**J**	1.0	0.14	ug/L			09/14/14 17:45	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/14/14 17:45	1
Chloroethane	ND		1.0	0.21	ug/L			09/14/14 17:45	1
Chloroform	ND		1.0	0.17	ug/L			09/14/14 17:45	1
Chloromethane	ND		1.0	0.28	ug/L			09/14/14 17:45	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/14/14 17:45	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/14/14 17:45	1
Cyclohexane	ND		1.0	0.25	ug/L			09/14/14 17:45	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/14/14 17:45	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/14/14 17:45	1
Ethyl ether	**7.9**		1.0	0.082	ug/L			09/14/14 17:45	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/14/14 17:45	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/14/14 17:45	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/14/14 17:45	1
Methyl acetate	ND		1.0	0.14	ug/L			09/14/14 17:45	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/14/14 17:45	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/14/14 17:45	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/14/14 17:45	1
Styrene	ND		1.0	0.097	ug/L			09/14/14 17:45	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/14/14 17:45	1
Toluene	ND		1.0	0.15	ug/L			09/14/14 17:45	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/14/14 17:45	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/14/14 17:45	1
Trichloroethene	ND		1.0	0.14	ug/L			09/14/14 17:45	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/14/14 17:45	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/14/14 17:45	1

Client Sample ID: SW-5 LANGAN

Lab Sample ID: 180-36441-1

Date Collected: 09/04/14 11:25

Matrix: Water

Date Received: 09/06/14 09:15

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*122*		*64 - 135*		*09/14/14 17:45*	*1*
4-Bromofluorobenzene (Surr)	*97*		*70 - 118*		*09/14/14 17:45*	*1*
Dibromofluoromethane (Surr)	*126*		*70 - 128*		*09/14/14 17:45*	*1*
Toluene-d8 (Surr)	*108*		*71 - 118*		*09/14/14 17:45*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**94**		5.0	1.1	mg/L			09/17/14 17:26	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**1300**		100	100	ug/L		09/08/14 12:45	09/09/14 19:36	10
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 22:08	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 22:08	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/09/14 22:08	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/09/14 22:08	5

Client Sample ID: SED-103

Lab Sample ID: 180-36441-2

Date Collected: 09/04/14 12:20

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 76.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.5	0.63	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,1,2,2-Tetrachloroethane	ND		6.5	0.94	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.5	1.4	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,1,2-Trichloroethane	ND		6.5	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,1-Dichloroethane	ND		6.5	0.75	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,1-Dichloroethene	ND		6.5	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2,4-Trichlorobenzene	ND		6.5	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2-Dibromo-3-Chloropropane	ND		6.5	0.98	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2-Dichlorobenzene	ND		6.5	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2-Dichloroethane	ND		6.5	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2-Dichloropropane	ND		6.5	0.71	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,3-Dichlorobenzene	ND		6.5	0.86	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,4-Dichlorobenzene	ND		6.5	0.83	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
2-Butanone (MEK)	ND		6.5	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
2-Hexanone	ND		6.5	0.90	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
4-Methyl-2-pentanone (MIBK)	ND		6.5	0.85	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Acetone	ND		26	6.5	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Benzene	ND		6.5	0.88	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Bromoform	ND		6.5	0.58	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Bromomethane	ND	*	6.5	0.96	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Carbon disulfide	ND		6.5	0.67	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Carbon tetrachloride	ND	*	6.5	0.58	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Chlorobenzene	ND		6.5	0.99	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Chlorodibromomethane	ND		6.5	0.93	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Chloroethane	ND	*	6.5	2.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Chloroform	ND		6.5	0.76	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Chloromethane	ND		6.5	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
cis-1,2-Dichloroethene	ND		6.5	0.92	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1

Client Sample ID: SED-103

Date Collected: 09/04/14 12:20
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-2

Matrix: Solid
Percent Solids: 76.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		6.5	0.88	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Cyclohexane	ND		6.5	0.48	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Dichlorobromomethane	ND		6.5	0.73	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Dichlorodifluoromethane	ND		6.5	0.87	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Ethyl ether	**40**		6.5	0.76	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Ethylbenzene	ND		6.5	0.84	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
1,2-Dibromoethane	ND		6.5	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Isopropylbenzene	ND		6.5	0.89	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Methyl acetate	ND		6.5	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Methyl tert-butyl ether	ND		6.5	0.98	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Methylcyclohexane	ND		6.5	0.95	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Methylene Chloride	ND		6.5	0.88	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Styrene	ND		6.5	0.92	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Tetrachloroethene	ND		6.5	0.89	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Toluene	ND		6.5	0.95	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
trans-1,2-Dichloroethene	ND		6.5	0.78	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
trans-1,3-Dichloropropene	ND		6.5	0.78	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Trichloroethene	ND		6.5	0.86	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Trichlorofluoromethane	ND		6.5	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1
Vinyl chloride	ND		6.5	0.61	ug/Kg	☼	09/08/14 04:18	09/08/14 07:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*52 - 124*	*09/08/14 04:18*	*09/08/14 07:08*	*1*
4-Bromofluorobenzene (Surr)	*86*		*63 - 120*	*09/08/14 04:18*	*09/08/14 07:08*	*1*
Dibromofluoromethane (Surr)	*109*		*68 - 121*	*09/08/14 04:18*	*09/08/14 07:08*	*1*
Toluene-d8 (Surr)	*111*		*72 - 127*	*09/08/14 04:18*	*09/08/14 07:08*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**68**		13	2.8	mg/Kg	☼		09/14/14 16:47	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**340**		20	20	ug/Kg		09/08/14 13:30	09/11/14 08:47	1
p-Phenolsulfonic acid	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 08:47	1
Benzenesulfonic acid	ND	*	20	20	ug/Kg		09/08/14 13:30	09/11/14 08:47	1
Resorcinol	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 08:47	1
2,3',4-Trihydroxydiphenyl	ND		59	59	ug/Kg		09/08/14 13:30	09/11/14 08:47	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**23**		0.10	0.10	%			09/10/14 09:37	1
Percent Solids	**77**		0.10	0.10	%			09/10/14 09:37	1

Client Sample ID: SW-4 LANGAN

Date Collected: 09/04/14 12:35
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/14/14 18:09	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SW-4 LANGAN
Date Collected: 09/04/14 12:35
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/14/14 18:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/14/14 18:09	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/14/14 18:09	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/14/14 18:09	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/14/14 18:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/14/14 18:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/14/14 18:09	1
1,2-Dichlorobenzene	**0.89**	**J**	1.0	0.15	ug/L			09/14/14 18:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/14/14 18:09	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/14/14 18:09	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/14/14 18:09	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/14/14 18:09	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/14/14 18:09	1
2-Hexanone	ND		5.0	0.16	ug/L			09/14/14 18:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/14/14 18:09	1
Acetone	**16**		5.0	2.5	ug/L			09/14/14 18:09	1
Benzene	ND		1.0	0.11	ug/L			09/14/14 18:09	1
Bromoform	ND		1.0	0.19	ug/L			09/14/14 18:09	1
Bromomethane	ND		1.0	0.31	ug/L			09/14/14 18:09	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/14/14 18:09	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/14/14 18:09	1
Chlorobenzene	**0.32**	**J**	1.0	0.14	ug/L			09/14/14 18:09	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/14/14 18:09	1
Chloroethane	ND		1.0	0.21	ug/L			09/14/14 18:09	1
Chloroform	ND		1.0	0.17	ug/L			09/14/14 18:09	1
Chloromethane	ND		1.0	0.28	ug/L			09/14/14 18:09	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/14/14 18:09	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/14/14 18:09	1
Cyclohexane	ND		1.0	0.25	ug/L			09/14/14 18:09	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/14/14 18:09	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/14/14 18:09	1
Ethyl ether	**6.6**		1.0	0.082	ug/L			09/14/14 18:09	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/14/14 18:09	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/14/14 18:09	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/14/14 18:09	1
Methyl acetate	ND		1.0	0.14	ug/L			09/14/14 18:09	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/14/14 18:09	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/14/14 18:09	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/14/14 18:09	1
Styrene	ND		1.0	0.097	ug/L			09/14/14 18:09	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/14/14 18:09	1
Toluene	ND		1.0	0.15	ug/L			09/14/14 18:09	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/14/14 18:09	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/14/14 18:09	1
Trichloroethene	ND		1.0	0.14	ug/L			09/14/14 18:09	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/14/14 18:09	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/14/14 18:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*121*		*64 - 135*		*09/14/14 18:09*	*1*

Client Sample ID: SW-4 LANGAN

Lab Sample ID: 180-36441-3

Date Collected: 09/04/14 12:35

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*70 - 118*		*09/14/14 18:09*	*1*
Dibromofluoromethane (Surr)	*128*		*70 - 128*		*09/14/14 18:09*	*1*
Toluene-d8 (Surr)	*112*		*71 - 118*		*09/14/14 18:09*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**99**		5.0	1.1	mg/L			09/17/14 17:41	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**1300**		100	100	ug/L		09/08/14 12:45	09/09/14 21:06	10
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 23:06	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 23:06	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/09/14 23:06	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/09/14 23:06	5

Client Sample ID: SED-102

Lab Sample ID: 180-36441-4

Date Collected: 09/04/14 13:10

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 68.0

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		7.4	0.72	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,1,2,2-Tetrachloroethane	ND		7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		7.4	1.6	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,1,2-Trichloroethane	ND		7.4	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,1-Dichloroethane	ND		7.4	0.85	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,1-Dichloroethene	ND		7.4	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2,4-Trichlorobenzene	ND	*	7.4	1.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2-Dibromo-3-Chloropropane	ND	*	7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2-Dichlorobenzene	ND	*	7.4	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2-Dichloroethane	ND		7.4	0.90	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2-Dichloropropane	ND		7.4	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,3-Dichlorobenzene	ND	*	7.4	0.97	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,4-Dichlorobenzene	ND	*	7.4	0.94	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
2-Butanone (MEK)	ND		7.4	1.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
2-Hexanone	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
4-Methyl-2-pentanone (MIBK)	ND		7.4	0.96	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Acetone	**19**	**J**	29	7.4	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Benzene	ND		7.4	0.99	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Bromoform	ND		7.4	0.65	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Bromomethane	ND	*	7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Carbon disulfide	ND		7.4	0.75	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Carbon tetrachloride	ND	*	7.4	0.66	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Chlorobenzene	ND		7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Chlorodibromomethane	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Chloroethane	ND	*	7.4	2.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Chloroform	ND		7.4	0.86	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Chloromethane	ND		7.4	1.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
cis-1,2-Dichloroethene	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1

Client Sample ID: SED-102

Lab Sample ID: 180-36441-4

Date Collected: 09/04/14 13:10

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 68.0

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Cyclohexane	**37**		7.4	0.55	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Dichlorobromomethane	ND		7.4	0.83	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Dichlorodifluoromethane	ND		7.4	0.98	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Ethyl ether	**1.6**	**J**	7.4	0.86	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Ethylbenzene	**2.2**	**J**	7.4	0.95	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
1,2-Dibromoethane	ND		7.4	1.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Isopropylbenzene	**2.8**	**J**	7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Methyl acetate	ND		7.4	1.3	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Methyl tert-butyl ether	ND		7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Methylcyclohexane	**100**		7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Methylene Chloride	ND		7.4	0.99	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Styrene	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Tetrachloroethene	ND		7.4	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Toluene	ND		7.4	1.1	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
trans-1,2-Dichloroethene	ND		7.4	0.88	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
trans-1,3-Dichloropropene	ND		7.4	0.88	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Trichloroethene	ND		7.4	0.97	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Trichlorofluoromethane	ND		7.4	1.4	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1
Vinyl chloride	ND		7.4	0.69	ug/Kg	☼	09/08/14 04:18	09/08/14 07:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*109*		*52 - 124*	*09/08/14 04:18*	*09/08/14 07:30*	*1*
4-Bromofluorobenzene (Surr)	*85*		*63 - 120*	*09/08/14 04:18*	*09/08/14 07:30*	*1*
Dibromofluoromethane (Surr)	*110*		*68 - 121*	*09/08/14 04:18*	*09/08/14 07:30*	*1*
Toluene-d8 (Surr)	*116*		*72 - 127*	*09/08/14 04:18*	*09/08/14 07:30*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**2500**		74	16	mg/Kg	☼		09/17/14 15:21	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**5000**		390	390	ug/Kg		09/08/14 13:30	09/11/14 01:38	20
p-Phenolsulfonic acid	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 11:46	1
Benzenesulfonic acid	**33**	*	20	20	ug/Kg		09/08/14 13:30	09/11/14 11:46	1
Resorcinol	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 11:46	1
2,3',4-Trihydroxydiphenyl	ND		59	59	ug/Kg		09/08/14 13:30	09/11/14 11:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**32**		0.10	0.10	%			09/10/14 09:37	1
Percent Solids	**68**		0.10	0.10	%			09/10/14 09:37	1

Client Sample ID: SW-3 LANGAN

Lab Sample ID: 180-36441-5

Date Collected: 09/04/14 13:20

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 16:04	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SW-3 LANGAN
Date Collected: 09/04/14 13:20
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 16:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 16:04	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 16:04	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 16:04	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 16:04	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 16:04	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 16:04	1
1,2-Dichlorobenzene	**0.94**	**J**	1.0	0.15	ug/L			09/15/14 16:04	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 16:04	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 16:04	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 16:04	1
1,4-Dichlorobenzene	**0.22**	**J**	1.0	0.21	ug/L			09/15/14 16:04	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 16:04	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 16:04	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 16:04	1
Acetone	**14**		5.0	2.5	ug/L			09/15/14 16:04	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 16:04	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 16:04	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 16:04	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 16:04	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 16:04	1
Chlorobenzene	**0.35**	**J**	1.0	0.14	ug/L			09/15/14 16:04	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 16:04	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 16:04	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 16:04	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 16:04	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 16:04	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 16:04	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 16:04	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 16:04	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 16:04	1
Ethyl ether	**5.5**		1.0	0.082	ug/L			09/15/14 16:04	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 16:04	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 16:04	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 16:04	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 16:04	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 16:04	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 16:04	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 16:04	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 16:04	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 16:04	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 16:04	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 16:04	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 16:04	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 16:04	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 16:04	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 16:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*09/15/14 16:04*	*1*

Client Sample ID: SW-3 LANGAN

Lab Sample ID: 180-36441-5

Date Collected: 09/04/14 13:20

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*09/15/14 16:04*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*09/15/14 16:04*	*1*
Toluene-d8 (Surr)	*106*		*71 - 118*		*09/15/14 16:04*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**100**		5.0	1.1	mg/L			09/17/14 17:57	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**1700**		150	150	ug/L		09/08/14 12:45	09/09/14 17:37	15
p-Phenolsulfonic acid	**70**		50	50	ug/L		09/08/14 12:45	09/10/14 00:36	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 00:36	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 00:36	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 00:36	5

Client Sample ID: SED-101

Lab Sample ID: 180-36441-6

Date Collected: 09/04/14 14:00

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 91.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.5	0.53	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,1,2,2-Tetrachloroethane	ND		5.5	0.79	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.5	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,1,2-Trichloroethane	ND		5.5	0.91	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,1-Dichloroethane	ND		5.5	0.63	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,1-Dichloroethene	ND		5.5	0.93	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2,4-Trichlorobenzene	ND		5.5	0.97	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2-Dibromo-3-Chloropropane	ND		5.5	0.82	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2-Dichlorobenzene	ND		5.5	0.87	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2-Dichloroethane	ND		5.5	0.67	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2-Dichloropropane	ND		5.5	0.60	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,3-Dichlorobenzene	ND		5.5	0.72	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,4-Dichlorobenzene	ND		5.5	0.70	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
2-Butanone (MEK)	ND		5.5	0.97	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
2-Hexanone	ND		5.5	0.76	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.5	0.72	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Acetone	ND		22	5.5	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Benzene	ND		5.5	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Bromoform	ND		5.5	0.49	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Bromomethane	ND	*	5.5	0.81	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Carbon disulfide	ND		5.5	0.56	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Carbon tetrachloride	ND	*	5.5	0.49	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Chlorobenzene	ND		5.5	0.83	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Chlorodibromomethane	ND		5.5	0.78	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Chloroethane	ND	*	5.5	1.7	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Chloroform	ND		5.5	0.64	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Chloromethane	ND		5.5	0.93	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
cis-1,2-Dichloroethene	ND		5.5	0.77	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1

Client Sample ID: SED-101

Lab Sample ID: 180-36441-6

Date Collected: 09/04/14 14:00
Matrix: Solid
Date Received: 09/06/14 09:15
Percent Solids: 91.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		5.5	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Cyclohexane	ND		5.5	0.41	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Dichlorobromomethane	ND		5.5	0.62	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Dichlorodifluoromethane	ND		5.5	0.73	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Ethyl ether	**0.66**	**J**	5.5	0.64	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Ethylbenzene	ND		5.5	0.70	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
1,2-Dibromoethane	ND		5.5	0.95	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Isopropylbenzene	ND		5.5	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Methyl acetate	ND		5.5	0.99	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Methyl tert-butyl ether	ND		5.5	0.82	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Methylcyclohexane	ND		5.5	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Methylene Chloride	ND		5.5	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Styrene	ND		5.5	0.77	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Tetrachloroethene	ND		5.5	0.75	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Toluene	ND		5.5	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
trans-1,2-Dichloroethene	ND		5.5	0.65	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
trans-1,3-Dichloropropene	ND		5.5	0.66	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Trichloroethene	ND		5.5	0.72	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Trichlorofluoromethane	ND		5.5	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1
Vinyl chloride	ND		5.5	0.51	ug/Kg	☼	09/08/14 04:18	09/08/14 09:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*52 - 124*	*09/08/14 04:18*	*09/08/14 09:45*	*1*
4-Bromofluorobenzene (Surr)	*92*		*63 - 120*	*09/08/14 04:18*	*09/08/14 09:45*	*1*
Dibromofluoromethane (Surr)	*100*		*68 - 121*	*09/08/14 04:18*	*09/08/14 09:45*	*1*
Toluene-d8 (Surr)	*99*		*72 - 127*	*09/08/14 04:18*	*09/08/14 09:45*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**59**		11	2.3	mg/Kg	☼		09/14/14 17:49	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**140**		20	20	ug/Kg		09/08/14 13:30	09/11/14 12:46	1
p-Phenolsulfonic acid	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 12:46	1
Benzenesulfonic acid	ND	*	20	20	ug/Kg		09/08/14 13:30	09/11/14 12:46	1
Resorcinol	ND		20	20	ug/Kg		09/08/14 13:30	09/11/14 12:46	1
2,3',4-Trihydroxydiphenyl	ND		59	59	ug/Kg		09/08/14 13:30	09/11/14 12:46	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**8.8**		0.10	0.10	%			09/10/14 09:37	1
Percent Solids	**91**		0.10	0.10	%			09/10/14 09:37	1

Client Sample ID: SG-7

Lab Sample ID: 180-36441-7

Date Collected: 09/04/14 14:30
Matrix: Water
Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 16:28	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SG-7
Date Collected: 09/04/14 14:30
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-7
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 16:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 16:28	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 16:28	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 16:28	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 16:28	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 16:28	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 16:28	1
1,2-Dichlorobenzene	**1.1**		1.0	0.15	ug/L			09/15/14 16:28	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 16:28	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 16:28	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 16:28	1
1,4-Dichlorobenzene	**0.23**	**J**	1.0	0.21	ug/L			09/15/14 16:28	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 16:28	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 16:28	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 16:28	1
Acetone	**6.3**		5.0	2.5	ug/L			09/15/14 16:28	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 16:28	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 16:28	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 16:28	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 16:28	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 16:28	1
Chlorobenzene	**0.43**	**J**	1.0	0.14	ug/L			09/15/14 16:28	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 16:28	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 16:28	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 16:28	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 16:28	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 16:28	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 16:28	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 16:28	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 16:28	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 16:28	1
Ethyl ether	**6.1**		1.0	0.082	ug/L			09/15/14 16:28	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 16:28	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 16:28	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 16:28	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 16:28	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 16:28	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 16:28	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 16:28	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 16:28	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 16:28	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 16:28	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 16:28	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 16:28	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 16:28	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 16:28	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*09/15/14 16:28*	*1*

Client Sample ID: SG-7

Lab Sample ID: 180-36441-7

Date Collected: 09/04/14 14:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*70 - 118*		*09/15/14 16:28*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 128*		*09/15/14 16:28*	*1*
Toluene-d8 (Surr)	*109*		*71 - 118*		*09/15/14 16:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**99**		5.0	1.1	mg/L			09/17/14 18:12	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**1900**		150	150	ug/L		09/08/14 12:45	09/09/14 18:37	15
p-Phenolsulfonic acid	**120**		50	50	ug/L		09/08/14 12:45	09/10/14 01:37	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 01:37	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 01:37	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 01:37	5

Client Sample ID: SG-5

Lab Sample ID: 180-36441-8

Date Collected: 09/04/14 15:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 16:52	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 16:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 16:52	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 16:52	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 16:52	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 16:52	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 16:52	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 16:52	1
1,2-Dichlorobenzene	**1.4**		1.0	0.15	ug/L			09/15/14 16:52	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 16:52	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 16:52	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 16:52	1
1,4-Dichlorobenzene	**0.32**	**J**	1.0	0.21	ug/L			09/15/14 16:52	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 16:52	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 16:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 16:52	1
Acetone	**8.3**		5.0	2.5	ug/L			09/15/14 16:52	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 16:52	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 16:52	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 16:52	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 16:52	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 16:52	1
Chlorobenzene	**0.66**	**J**	1.0	0.14	ug/L			09/15/14 16:52	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 16:52	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 16:52	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 16:52	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 16:52	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 16:52	1

Client Sample ID: SG-5

Lab Sample ID: 180-36441-8

Date Collected: 09/04/14 15:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 16:52	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 16:52	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 16:52	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 16:52	1
Ethyl ether	**2.4**		1.0	0.082	ug/L			09/15/14 16:52	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 16:52	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 16:52	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 16:52	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 16:52	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 16:52	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 16:52	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 16:52	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 16:52	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 16:52	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 16:52	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 16:52	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 16:52	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 16:52	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 16:52	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 16:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 135*		*09/15/14 16:52*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 118*		*09/15/14 16:52*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*09/15/14 16:52*	*1*
Toluene-d8 (Surr)	*109*		*71 - 118*		*09/15/14 16:52*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**98**		5.0	1.1	mg/L			09/17/14 18:59	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2400**		200	200	ug/L		09/08/14 12:45	09/09/14 16:07	20
p-Phenolsulfonic acid	**120**		50	50	ug/L		09/08/14 12:45	09/10/14 02:36	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 02:36	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 02:36	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 02:36	5

Client Sample ID: SG-6

Lab Sample ID: 180-36441-9

Date Collected: 09/04/14 16:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/14/14 20:10	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/14/14 20:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/14/14 20:10	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/14/14 20:10	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/14/14 20:10	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SG-6
Date Collected: 09/04/14 16:00
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/14/14 20:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/14/14 20:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/14/14 20:10	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/14/14 20:10	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/14/14 20:10	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/14/14 20:10	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/14/14 20:10	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/14/14 20:10	1
2-Butanone (MEK)	**0.84**	**J**	5.0	0.55	ug/L			09/14/14 20:10	1
2-Hexanone	ND		5.0	0.16	ug/L			09/14/14 20:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/14/14 20:10	1
Acetone	**12**		5.0	2.5	ug/L			09/14/14 20:10	1
Benzene	**0.28**	**J**	1.0	0.11	ug/L			09/14/14 20:10	1
Bromoform	ND		1.0	0.19	ug/L			09/14/14 20:10	1
Bromomethane	ND		1.0	0.31	ug/L			09/14/14 20:10	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/14/14 20:10	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/14/14 20:10	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/14/14 20:10	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/14/14 20:10	1
Chloroethane	ND		1.0	0.21	ug/L			09/14/14 20:10	1
Chloroform	ND		1.0	0.17	ug/L			09/14/14 20:10	1
Chloromethane	ND		1.0	0.28	ug/L			09/14/14 20:10	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/14/14 20:10	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/14/14 20:10	1
Cyclohexane	ND		1.0	0.25	ug/L			09/14/14 20:10	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/14/14 20:10	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/14/14 20:10	1
Ethyl ether	**0.11**	**J**	1.0	0.082	ug/L			09/14/14 20:10	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/14/14 20:10	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/14/14 20:10	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/14/14 20:10	1
Methyl acetate	ND		1.0	0.14	ug/L			09/14/14 20:10	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/14/14 20:10	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/14/14 20:10	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/14/14 20:10	1
Styrene	ND		1.0	0.097	ug/L			09/14/14 20:10	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/14/14 20:10	1
Toluene	ND		1.0	0.15	ug/L			09/14/14 20:10	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/14/14 20:10	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/14/14 20:10	1
Trichloroethene	ND		1.0	0.14	ug/L			09/14/14 20:10	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/14/14 20:10	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/14/14 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*124*		*64 - 135*		*09/14/14 20:10*	*1*
4-Bromofluorobenzene (Surr)	*91*		*70 - 118*		*09/14/14 20:10*	*1*
Dibromofluoromethane (Surr)	*128*		*70 - 128*		*09/14/14 20:10*	*1*
Toluene-d8 (Surr)	*104*		*71 - 118*		*09/14/14 20:10*	*1*

Client Sample ID: SG-6

Lab Sample ID: 180-36441-9

Date Collected: 09/04/14 16:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**89**		5.0	1.1	mg/L			09/17/14 19:46	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**130**		50	50	ug/L		09/08/14 12:45	09/10/14 04:05	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 04:05	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 04:05	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 04:05	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 04:05	5

Client Sample ID: SW-2 LANGAN

Lab Sample ID: 180-36441-10

Date Collected: 09/04/14 16:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 17:15	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 17:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 17:15	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 17:15	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 17:15	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 17:15	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 17:15	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 17:15	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 17:15	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 17:15	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 17:15	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 17:15	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 17:15	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 17:15	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 17:15	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 17:15	1
Acetone	**9.7**		5.0	2.5	ug/L			09/15/14 17:15	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 17:15	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 17:15	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 17:15	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 17:15	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 17:15	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 17:15	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 17:15	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 17:15	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 17:15	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 17:15	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 17:15	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 17:15	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 17:15	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 17:15	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 17:15	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 17:15	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 17:15	1

Client Sample ID: SW-2 LANGAN

Lab Sample ID: 180-36441-10

Date Collected: 09/04/14 16:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 17:15	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 17:15	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 17:15	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 17:15	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 17:15	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 17:15	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 17:15	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 17:15	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 17:15	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 17:15	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 17:15	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 17:15	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 17:15	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*09/15/14 17:15*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 118*		*09/15/14 17:15*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*09/15/14 17:15*	*1*
Toluene-d8 (Surr)	*107*		*71 - 118*		*09/15/14 17:15*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**93**		5.0	1.1	mg/L			09/17/14 20:01	5

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**130**		50	50	ug/L		09/08/14 12:45	09/10/14 05:05	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 05:05	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 05:05	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 05:05	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 05:05	5

Client Sample ID: SW-1 LANGAN

Lab Sample ID: 180-36441-11

Date Collected: 09/04/14 16:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 17:40	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 17:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 17:40	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 17:40	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 17:40	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 17:40	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 17:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 17:40	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 17:40	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 17:40	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 17:40	1

Client Sample ID: SW-1 LANGAN
Date Collected: 09/04/14 16:30
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-11
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 17:40	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 17:40	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 17:40	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 17:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 17:40	1
Acetone	**5.9**		5.0	2.5	ug/L			09/15/14 17:40	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 17:40	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 17:40	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 17:40	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 17:40	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 17:40	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 17:40	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 17:40	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 17:40	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 17:40	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 17:40	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 17:40	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 17:40	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 17:40	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 17:40	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 17:40	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 17:40	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 17:40	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 17:40	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 17:40	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 17:40	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 17:40	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 17:40	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 17:40	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 17:40	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 17:40	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 17:40	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 17:40	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 17:40	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 17:40	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 17:40	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*64 - 135*		*09/15/14 17:40*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 118*		*09/15/14 17:40*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*09/15/14 17:40*	*1*
Toluene-d8 (Surr)	*108*		*71 - 118*		*09/15/14 17:40*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**89**		5.0	1.1	mg/L			09/17/14 20:17	5

Client Sample ID: SW-1 LANGAN

Lab Sample ID: 180-36441-11

Date Collected: 09/04/14 16:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	130		50	50	ug/L		09/08/14 12:45	09/10/14 06:05	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 06:05	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/10/14 06:05	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/10/14 06:05	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/10/14 06:05	5

Client Sample ID: DUP090414

Lab Sample ID: 180-36441-12

Date Collected: 09/04/14 00:00

Matrix: Solid

Date Received: 09/06/14 09:15

Percent Solids: 88.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.7	0.55	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,1,2,2-Tetrachloroethane	ND		5.7	0.81	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.7	1.2	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,1,2-Trichloroethane	ND		5.7	0.94	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,1-Dichloroethane	ND		5.7	0.65	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,1-Dichloroethene	ND		5.7	0.96	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2,4-Trichlorobenzene	ND		5.7	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2-Dibromo-3-Chloropropane	ND		5.7	0.85	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2-Dichlorobenzene	ND		5.7	0.90	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2-Dichloroethane	ND		5.7	0.69	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2-Dichloropropane	ND		5.7	0.62	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,3-Dichlorobenzene	ND		5.7	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,4-Dichlorobenzene	ND		5.7	0.72	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
2-Butanone (MEK)	ND		5.7	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
2-Hexanone	ND		5.7	0.78	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.7	0.74	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Acetone	ND		23	5.7	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Benzene	ND		5.7	0.76	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Bromoform	ND		5.7	0.50	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Bromomethane	ND	*	5.7	0.84	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Carbon disulfide	ND		5.7	0.58	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Carbon tetrachloride	ND	*	5.7	0.51	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Chlorobenzene	ND		5.7	0.86	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Chlorodibromomethane	ND		5.7	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Chloroethane	ND	*	5.7	1.8	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Chloroform	ND		5.7	0.66	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Chloromethane	ND		5.7	0.96	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
cis-1,2-Dichloroethene	ND		5.7	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
cis-1,3-Dichloropropene	ND		5.7	0.77	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Cyclohexane	ND		5.7	0.42	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Dichlorobromomethane	ND		5.7	0.64	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Dichlorodifluoromethane	ND		5.7	0.75	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Ethyl ether	ND		5.7	0.66	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Ethylbenzene	ND		5.7	0.73	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
1,2-Dibromoethane	ND		5.7	0.98	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Isopropylbenzene	ND		5.7	0.77	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Methyl acetate	ND		5.7	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Methyl tert-butyl ether	ND		5.7	0.85	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1

Client Sample ID: DUP090414

Lab Sample ID: 180-36441-12
Date Collected: 09/04/14 00:00
Matrix: Solid
Date Received: 09/06/14 09:15
Percent Solids: 88.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		5.7	0.82	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Methylene Chloride	ND		5.7	0.76	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Styrene	ND		5.7	0.80	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Tetrachloroethene	ND		5.7	0.77	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Toluene	ND		5.7	0.83	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
trans-1,2-Dichloroethene	ND		5.7	0.67	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
trans-1,3-Dichloropropene	ND		5.7	0.68	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Trichloroethene	ND		5.7	0.75	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Trichlorofluoromethane	ND		5.7	1.0	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1
Vinyl chloride	ND		5.7	0.53	ug/Kg	☼	09/08/14 04:18	09/08/14 09:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*52 - 124*	*09/08/14 04:18*	*09/08/14 09:23*	*1*
4-Bromofluorobenzene (Surr)	*93*		*63 - 120*	*09/08/14 04:18*	*09/08/14 09:23*	*1*
Dibromofluoromethane (Surr)	*105*		*68 - 121*	*09/08/14 04:18*	*09/08/14 09:23*	*1*
Toluene-d8 (Surr)	*102*		*72 - 127*	*09/08/14 04:18*	*09/08/14 09:23*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**120**		11	2.4	mg/Kg	☼		09/14/14 18:05	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**160**		19	19	ug/Kg		09/08/14 13:30	09/11/14 15:35	1
p-Phenolsulfonic acid	ND		19	19	ug/Kg		09/08/14 13:30	09/11/14 15:35	1
Benzenesulfonic acid	ND	*	19	19	ug/Kg		09/08/14 13:30	09/11/14 15:35	1
Resorcinol	ND		19	19	ug/Kg		09/08/14 13:30	09/11/14 15:35	1
2,3',4-Trihydroxydiphenyl	ND		58	58	ug/Kg		09/08/14 13:30	09/11/14 15:35	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**12**		0.10	0.10	%			09/10/14 09:37	1
Percent Solids	**88**		0.10	0.10	%			09/10/14 09:37	1

Client Sample ID: SG-4

Lab Sample ID: 180-36441-13
Date Collected: 09/05/14 09:55
Matrix: Water
Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 13:14	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 13:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 13:14	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 13:14	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 13:14	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 13:14	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 13:14	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 13:14	1
1,2-Dichlorobenzene	**1.6**		1.0	0.15	ug/L			09/15/14 13:14	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 13:14	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 13:14	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SG-4
Date Collected: 09/05/14 09:55
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-13
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 13:14	1
1,4-Dichlorobenzene	**0.36**	**J**	1.0	0.21	ug/L			09/15/14 13:14	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 13:14	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 13:14	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 13:14	1
Acetone	**5.4**		5.0	2.5	ug/L			09/15/14 13:14	1
Benzene	**0.12**	**J**	1.0	0.11	ug/L			09/15/14 13:14	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 13:14	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 13:14	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 13:14	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 13:14	1
Chlorobenzene	**0.88**	**J**	1.0	0.14	ug/L			09/15/14 13:14	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 13:14	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 13:14	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 13:14	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 13:14	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 13:14	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 13:14	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 13:14	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 13:14	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 13:14	1
Ethyl ether	**1.5**		1.0	0.082	ug/L			09/15/14 13:14	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 13:14	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 13:14	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 13:14	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 13:14	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 13:14	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 13:14	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 13:14	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 13:14	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 13:14	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 13:14	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 13:14	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 13:14	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 13:14	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 13:14	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 13:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 135*		*09/15/14 13:14*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*09/15/14 13:14*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*09/15/14 13:14*	*1*
Toluene-d8 (Surr)	*106*		*71 - 118*		*09/15/14 13:14*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**92**		5.0	1.1	mg/L			09/17/14 20:32	5

Client Sample ID: SG-4

Lab Sample ID: 180-36441-13

Date Collected: 09/05/14 09:55

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**9.7**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 13:55	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**3700**		250	250	ug/L		09/08/14 12:45	09/11/14 05:07	25
p-Phenolsulfonic acid	**150**		50	50	ug/L		09/08/14 12:45	09/11/14 19:19	5
Benzenesulfonic acid	**54**		50	50	ug/L		09/08/14 12:45	09/11/14 19:19	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/11/14 19:19	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/11/14 19:19	5

Client Sample ID: SG-3

Lab Sample ID: 180-36441-14

Date Collected: 09/05/14 10:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/16/14 16:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/16/14 16:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/16/14 16:07	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/16/14 16:07	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/16/14 16:07	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/16/14 16:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/16/14 16:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/16/14 16:07	1
1,2-Dichlorobenzene	**1.9**		1.0	0.15	ug/L			09/16/14 16:07	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/16/14 16:07	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/16/14 16:07	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/16/14 16:07	1
1,4-Dichlorobenzene	**0.36**	**J**	1.0	0.21	ug/L			09/16/14 16:07	1
2-Butanone (MEK)	**0.69**	**J**	5.0	0.55	ug/L			09/16/14 16:07	1
2-Hexanone	ND		5.0	0.16	ug/L			09/16/14 16:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/16/14 16:07	1
Acetone	**7.2**		5.0	2.5	ug/L			09/16/14 16:07	1
Benzene	**0.17**	**J**	1.0	0.11	ug/L			09/16/14 16:07	1
Bromoform	ND		1.0	0.19	ug/L			09/16/14 16:07	1
Bromomethane	ND		1.0	0.31	ug/L			09/16/14 16:07	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/16/14 16:07	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/16/14 16:07	1
Chlorobenzene	**1.1**		1.0	0.14	ug/L			09/16/14 16:07	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/16/14 16:07	1
Chloroethane	ND		1.0	0.21	ug/L			09/16/14 16:07	1
Chloroform	ND		1.0	0.17	ug/L			09/16/14 16:07	1
Chloromethane	ND		1.0	0.28	ug/L			09/16/14 16:07	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/16/14 16:07	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/16/14 16:07	1
Cyclohexane	ND		1.0	0.25	ug/L			09/16/14 16:07	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/16/14 16:07	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/16/14 16:07	1
Ethyl ether	**1.0**		1.0	0.082	ug/L			09/16/14 16:07	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/16/14 16:07	1

Client Sample ID: SG-3

Lab Sample ID: 180-36441-14

Date Collected: 09/05/14 10:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/16/14 16:07	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/16/14 16:07	1
Methyl acetate	ND		1.0	0.14	ug/L			09/16/14 16:07	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/16/14 16:07	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/16/14 16:07	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/16/14 16:07	1
Styrene	ND		1.0	0.097	ug/L			09/16/14 16:07	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/16/14 16:07	1
Toluene	ND		1.0	0.15	ug/L			09/16/14 16:07	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/16/14 16:07	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/16/14 16:07	1
Trichloroethene	ND		1.0	0.14	ug/L			09/16/14 16:07	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/16/14 16:07	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/16/14 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*		*09/16/14 16:07*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*09/16/14 16:07*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 128*		*09/16/14 16:07*	*1*
Toluene-d8 (Surr)	*106*		*71 - 118*		*09/16/14 16:07*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**95**		5.0	1.1	mg/L			09/17/14 21:19	5

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/07/14 12:10	09/09/14 14:31	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**3100**		200	200	ug/L		09/08/14 12:45	09/11/14 17:20	20
p-Phenolsulfonic acid	**180**		50	50	ug/L		09/08/14 12:45	09/11/14 21:48	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/11/14 21:48	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/11/14 21:48	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/11/14 21:48	5

Client Sample ID: SG-8

Lab Sample ID: 180-36441-15

Date Collected: 09/05/14 11:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/16/14 18:59	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/16/14 18:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/16/14 18:59	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/16/14 18:59	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/16/14 18:59	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/16/14 18:59	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/16/14 18:59	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/16/14 18:59	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SG-8
Date Collected: 09/05/14 11:00
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-15
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	**2.6**		1.0	0.15	ug/L			09/16/14 18:59	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/16/14 18:59	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/16/14 18:59	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/16/14 18:59	1
1,4-Dichlorobenzene	**0.64**	**J**	1.0	0.21	ug/L			09/16/14 18:59	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/16/14 18:59	1
2-Hexanone	ND		5.0	0.16	ug/L			09/16/14 18:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/16/14 18:59	1
Acetone	**19**		5.0	2.5	ug/L			09/16/14 18:59	1
Benzene	**0.15**	**J**	1.0	0.11	ug/L			09/16/14 18:59	1
Bromoform	ND		1.0	0.19	ug/L			09/16/14 18:59	1
Bromomethane	ND		1.0	0.31	ug/L			09/16/14 18:59	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/16/14 18:59	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/16/14 18:59	1
Chlorobenzene	**2.1**		1.0	0.14	ug/L			09/16/14 18:59	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/16/14 18:59	1
Chloroethane	ND		1.0	0.21	ug/L			09/16/14 18:59	1
Chloroform	ND		1.0	0.17	ug/L			09/16/14 18:59	1
Chloromethane	ND		1.0	0.28	ug/L			09/16/14 18:59	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/16/14 18:59	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/16/14 18:59	1
Cyclohexane	ND		1.0	0.25	ug/L			09/16/14 18:59	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/16/14 18:59	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/16/14 18:59	1
Ethyl ether	**1.1**		1.0	0.082	ug/L			09/16/14 18:59	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/16/14 18:59	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/16/14 18:59	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/16/14 18:59	1
Methyl acetate	ND		1.0	0.14	ug/L			09/16/14 18:59	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/16/14 18:59	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/16/14 18:59	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/16/14 18:59	1
Styrene	ND		1.0	0.097	ug/L			09/16/14 18:59	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/16/14 18:59	1
Toluene	ND		1.0	0.15	ug/L			09/16/14 18:59	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/16/14 18:59	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/16/14 18:59	1
Trichloroethene	ND		1.0	0.14	ug/L			09/16/14 18:59	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/16/14 18:59	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/16/14 18:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*09/16/14 18:59*	*1*
4-Bromofluorobenzene (Surr)	*105*		*70 - 118*		*09/16/14 18:59*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*09/16/14 18:59*	*1*
Toluene-d8 (Surr)	*107*		*71 - 118*		*09/16/14 18:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**98**		5.0	1.1	mg/L			09/17/14 21:35	5

Client Sample ID: SG-8

Lab Sample ID: 180-36441-15

Date Collected: 09/05/14 11:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**8.1**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 14:42	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**1000**		100	100	ug/L		09/08/14 12:45	09/11/14 18:21	10
p-Phenolsulfonic acid	**550**		50	50	ug/L		09/08/14 12:45	09/11/14 22:48	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/11/14 22:48	5
Resorcinol	**300**		50	50	ug/L		09/08/14 12:45	09/11/14 22:48	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/11/14 22:48	5

Client Sample ID: SW-1

Lab Sample ID: 180-36441-16

Date Collected: 09/05/14 11:05

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 18:28	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 18:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 18:28	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 18:28	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 18:28	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 18:28	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 18:28	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 18:28	1
1,2-Dichlorobenzene	**1.7**		1.0	0.15	ug/L			09/15/14 18:28	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 18:28	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 18:28	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 18:28	1
1,4-Dichlorobenzene	**0.30**	**J**	1.0	0.21	ug/L			09/15/14 18:28	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 18:28	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 18:28	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 18:28	1
Acetone	**8.8**		5.0	2.5	ug/L			09/15/14 18:28	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 18:28	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 18:28	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 18:28	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 18:28	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 18:28	1
Chlorobenzene	**0.70**	**J**	1.0	0.14	ug/L			09/15/14 18:28	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 18:28	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 18:28	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 18:28	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 18:28	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 18:28	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 18:28	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 18:28	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 18:28	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 18:28	1
Ethyl ether	**0.54**	**J**	1.0	0.082	ug/L			09/15/14 18:28	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 18:28	1

Client Sample ID: SW-1

Lab Sample ID: 180-36441-16

Date Collected: 09/05/14 11:05

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 18:28	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 18:28	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 18:28	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 18:28	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 18:28	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 18:28	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 18:28	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 18:28	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 18:28	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 18:28	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 18:28	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 18:28	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 18:28	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 18:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*64 - 135*		*09/15/14 18:28*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*09/15/14 18:28*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*09/15/14 18:28*	*1*
Toluene-d8 (Surr)	*106*		*71 - 118*		*09/15/14 18:28*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**92**		5.0	1.1	mg/L			09/17/14 21:50	5

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**14**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 14:54	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**100**		50	50	ug/L		09/08/14 12:45	09/12/14 00:18	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 00:18	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 00:18	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 00:18	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 00:18	5

Client Sample ID: SG-2

Lab Sample ID: 180-36441-17

Date Collected: 09/05/14 11:45

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 18:52	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 18:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 18:52	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 18:52	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 18:52	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 18:52	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 18:52	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 18:52	1

Client Sample ID: SG-2
Date Collected: 09/05/14 11:45
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-17
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	**1.2**		1.0	0.15	ug/L			09/15/14 18:52	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 18:52	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 18:52	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 18:52	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 18:52	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 18:52	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 18:52	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 18:52	1
Acetone	**6.3**		5.0	2.5	ug/L			09/15/14 18:52	1
Benzene	**0.11**	**J**	1.0	0.11	ug/L			09/15/14 18:52	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 18:52	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 18:52	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 18:52	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 18:52	1
Chlorobenzene	**0.34**	**J**	1.0	0.14	ug/L			09/15/14 18:52	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 18:52	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 18:52	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 18:52	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 18:52	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 18:52	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 18:52	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 18:52	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 18:52	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 18:52	1
Ethyl ether	**0.31**	**J**	1.0	0.082	ug/L			09/15/14 18:52	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 18:52	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 18:52	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 18:52	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 18:52	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 18:52	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 18:52	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 18:52	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 18:52	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 18:52	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 18:52	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 18:52	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 18:52	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 18:52	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 18:52	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*		*09/15/14 18:52*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 118*		*09/15/14 18:52*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 128*		*09/15/14 18:52*	*1*
Toluene-d8 (Surr)	*110*		*71 - 118*		*09/15/14 18:52*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**95**		5.0	1.1	mg/L			09/17/14 22:06	5

Client Sample ID: SG-2

Lab Sample ID: 180-36441-17

Date Collected: 09/05/14 11:45

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**7.8**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 15:06	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**110**		50	50	ug/L		09/08/14 12:45	09/12/14 01:18	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 01:18	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 01:18	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 01:18	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 01:18	5

Client Sample ID: SH-1

Lab Sample ID: 180-36441-18

Date Collected: 09/05/14 12:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 19:16	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 19:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 19:16	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 19:16	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 19:16	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 19:16	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 19:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 19:16	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 19:16	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 19:16	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 19:16	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 19:16	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 19:16	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 19:16	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 19:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 19:16	1
Acetone	**5.7**		5.0	2.5	ug/L			09/15/14 19:16	1
Benzene	**0.11**	**J**	1.0	0.11	ug/L			09/15/14 19:16	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 19:16	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 19:16	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 19:16	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 19:16	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 19:16	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 19:16	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 19:16	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 19:16	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 19:16	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 19:16	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 19:16	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 19:16	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 19:16	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 19:16	1
Ethyl ether	**0.20**	**J**	1.0	0.082	ug/L			09/15/14 19:16	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 19:16	1

Client Sample ID: SH-1

Lab Sample ID: 180-36441-18

Date Collected: 09/05/14 12:15

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 19:16	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 19:16	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 19:16	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 19:16	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 19:16	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 19:16	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 19:16	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 19:16	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 19:16	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 19:16	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 19:16	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 19:16	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 19:16	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 19:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*64 - 135*		*09/15/14 19:16*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 118*		*09/15/14 19:16*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 128*		*09/15/14 19:16*	*1*
Toluene-d8 (Surr)	*109*		*71 - 118*		*09/15/14 19:16*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**90**		5.0	1.1	mg/L			09/17/14 22:52	5

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**15**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 15:18	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**110**		50	50	ug/L		09/08/14 12:45	09/12/14 02:17	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 02:17	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 02:17	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 02:17	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 02:17	5

Client Sample ID: SG-1

Lab Sample ID: 180-36441-19

Date Collected: 09/05/14 12:25

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 20:03	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 20:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 20:03	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 20:03	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 20:03	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 20:03	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 20:03	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 20:03	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: SG-1
Date Collected: 09/05/14 12:25
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-19
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 20:03	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 20:03	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 20:03	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 20:03	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 20:03	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 20:03	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 20:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 20:03	1
Acetone	**5.9**		5.0	2.5	ug/L			09/15/14 20:03	1
Benzene	**0.13**	**J**	1.0	0.11	ug/L			09/15/14 20:03	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 20:03	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 20:03	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 20:03	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 20:03	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 20:03	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 20:03	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 20:03	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 20:03	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 20:03	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 20:03	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 20:03	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 20:03	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 20:03	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 20:03	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 20:03	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 20:03	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 20:03	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 20:03	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 20:03	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 20:03	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 20:03	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 20:03	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 20:03	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 20:03	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 20:03	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 20:03	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 20:03	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 20:03	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 20:03	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 20:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*09/15/14 20:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*09/15/14 20:03*	*1*
Dibromofluoromethane (Surr)	*105*		*70 - 128*		*09/15/14 20:03*	*1*
Toluene-d8 (Surr)	*106*		*71 - 118*		*09/15/14 20:03*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**93**		5.0	1.1	mg/L			09/17/14 23:08	5

Client Sample ID: SG-1

Lab Sample ID: 180-36441-19

Date Collected: 09/05/14 12:25

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**9.0**	**J**	50	5.0	ug/L		09/07/14 12:10	09/09/14 15:30	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**120**		50	50	ug/L		09/08/14 12:45	09/12/14 15:37	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 15:37	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 15:37	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 15:37	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 15:37	5

Client Sample ID: EB090514

Lab Sample ID: 180-36441-20

Date Collected: 09/05/14 12:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 20:27	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 20:27	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 20:27	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 20:27	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 20:27	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 20:27	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 20:27	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 20:27	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 20:27	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 20:27	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 20:27	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 20:27	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 20:27	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 20:27	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 20:27	1
Acetone	**5.3**		5.0	2.5	ug/L			09/15/14 20:27	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 20:27	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 20:27	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 20:27	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 20:27	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 20:27	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 20:27	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 20:27	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 20:27	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 20:27	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 20:27	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 20:27	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 20:27	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 20:27	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 20:27	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 20:27	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 20:27	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 20:27	1

Client Sample ID: EB090514

Lab Sample ID: 180-36441-20

Date Collected: 09/05/14 12:30

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 20:27	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 20:27	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 20:27	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 20:27	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 20:27	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 20:27	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 20:27	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 20:27	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 20:27	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 20:27	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 20:27	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 20:27	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 20:27	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 20:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*09/15/14 20:27*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 118*		*09/15/14 20:27*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*09/15/14 20:27*	*1*
Toluene-d8 (Surr)	*111*		*71 - 118*		*09/15/14 20:27*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			09/17/14 23:24	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/07/14 12:10	09/09/14 15:53	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 16:37	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 16:37	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/12/14 16:37	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 16:37	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 16:37	5

Client Sample ID: DUP090514

Lab Sample ID: 180-36441-21

Date Collected: 09/05/14 00:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/16/14 19:23	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/16/14 19:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/16/14 19:23	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/16/14 19:23	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/16/14 19:23	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/16/14 19:23	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/16/14 19:23	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/16/14 19:23	1

Client Sample ID: DUP090514
Date Collected: 09/05/14 00:00
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-21
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	**1.8**		1.0	0.15	ug/L			09/16/14 19:23	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/16/14 19:23	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/16/14 19:23	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/16/14 19:23	1
1,4-Dichlorobenzene	**0.38**	**J**	1.0	0.21	ug/L			09/16/14 19:23	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/16/14 19:23	1
2-Hexanone	ND		5.0	0.16	ug/L			09/16/14 19:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/16/14 19:23	1
Acetone	**5.5**		5.0	2.5	ug/L			09/16/14 19:23	1
Benzene	**0.15**	**J**	1.0	0.11	ug/L			09/16/14 19:23	1
Bromoform	ND		1.0	0.19	ug/L			09/16/14 19:23	1
Bromomethane	ND		1.0	0.31	ug/L			09/16/14 19:23	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/16/14 19:23	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/16/14 19:23	1
Chlorobenzene	**1.1**		1.0	0.14	ug/L			09/16/14 19:23	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/16/14 19:23	1
Chloroethane	ND		1.0	0.21	ug/L			09/16/14 19:23	1
Chloroform	ND		1.0	0.17	ug/L			09/16/14 19:23	1
Chloromethane	ND		1.0	0.28	ug/L			09/16/14 19:23	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/16/14 19:23	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/16/14 19:23	1
Cyclohexane	ND		1.0	0.25	ug/L			09/16/14 19:23	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/16/14 19:23	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/16/14 19:23	1
Ethyl ether	**0.90**	**J**	1.0	0.082	ug/L			09/16/14 19:23	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/16/14 19:23	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/16/14 19:23	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/16/14 19:23	1
Methyl acetate	ND		1.0	0.14	ug/L			09/16/14 19:23	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/16/14 19:23	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/16/14 19:23	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/16/14 19:23	1
Styrene	ND		1.0	0.097	ug/L			09/16/14 19:23	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/16/14 19:23	1
Toluene	ND		1.0	0.15	ug/L			09/16/14 19:23	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/16/14 19:23	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/16/14 19:23	1
Trichloroethene	ND		1.0	0.14	ug/L			09/16/14 19:23	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/16/14 19:23	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/16/14 19:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*09/16/14 19:23*	*1*
4-Bromofluorobenzene (Surr)	*108*		*70 - 118*		*09/16/14 19:23*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*09/16/14 19:23*	*1*
Toluene-d8 (Surr)	*108*		*71 - 118*		*09/16/14 19:23*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**93**		5.0	1.1	mg/L			09/17/14 23:39	5

Client Sample ID: DUP090514

Lab Sample ID: 180-36441-21

Date Collected: 09/05/14 00:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/07/14 12:10	09/09/14 16:05	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**3200**		250	250	ug/L		09/08/14 12:45	09/11/14 07:07	25
p-Phenolsulfonic acid	**240**		50	50	ug/L		09/08/14 12:45	09/12/14 17:36	5
Benzenesulfonic acid	**51**		50	50	ug/L		09/08/14 12:45	09/12/14 17:36	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/12/14 17:36	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/12/14 17:36	5

Client Sample ID: TRIP BLANKS

Lab Sample ID: 180-36441-22

Date Collected: 09/05/14 00:00

Matrix: Water

Date Received: 09/06/14 09:15

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 13:37	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 13:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 13:37	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 13:37	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 13:37	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 13:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 13:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 13:37	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 13:37	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 13:37	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 13:37	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 13:37	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 13:37	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 13:37	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 13:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 13:37	1
Acetone	**12**		5.0	2.5	ug/L			09/15/14 13:37	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 13:37	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 13:37	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 13:37	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 13:37	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 13:37	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 13:37	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 13:37	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 13:37	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 13:37	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 13:37	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 13:37	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 13:37	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 13:37	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 13:37	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 13:37	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 13:37	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 13:37	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Client Sample ID: TRIP BLANKS
Date Collected: 09/05/14 00:00
Date Received: 09/06/14 09:15

Lab Sample ID: 180-36441-22
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 13:37	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 13:37	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 13:37	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 13:37	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 13:37	1
Methylene Chloride	**0.68**	**J**	1.0	0.13	ug/L			09/15/14 13:37	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 13:37	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 13:37	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 13:37	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 13:37	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 13:37	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 13:37	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 13:37	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 13:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*09/15/14 13:37*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*09/15/14 13:37*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*09/15/14 13:37*	*1*
Toluene-d8 (Surr)	*104*		*71 - 118*		*09/15/14 13:37*	*1*

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36441-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-117277/1-A
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117277

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.49	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.72	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.1	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,1,2-Trichloroethane	ND		5.0	0.83	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,1-Dichloroethane	ND		5.0	0.58	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,1-Dichloroethene	ND		5.0	0.85	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2,4-Trichlorobenzene	ND		5.0	0.88	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.75	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2-Dichlorobenzene	ND		5.0	0.80	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2-Dichloroethane	ND		5.0	0.61	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2-Dichloropropane	ND		5.0	0.54	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,3-Dichlorobenzene	ND		5.0	0.66	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,4-Dichlorobenzene	ND		5.0	0.64	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
2-Butanone (MEK)	ND		5.0	0.88	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
2-Hexanone	ND		5.0	0.69	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.65	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Acetone	ND		20	5.0	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Benzene	ND		5.0	0.68	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Bromoform	ND		5.0	0.44	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Bromomethane	ND		5.0	0.74	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Carbon disulfide	ND		5.0	0.51	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Carbon tetrachloride	ND		5.0	0.45	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Chlorobenzene	ND		5.0	0.76	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Chlorodibromomethane	ND		5.0	0.71	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Chloroethane	ND		5.0	1.5	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Chloroform	ND		5.0	0.58	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Chloromethane	ND		5.0	0.85	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
cis-1,2-Dichloroethene	ND		5.0	0.70	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
cis-1,3-Dichloropropene	ND		5.0	0.68	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Cyclohexane	ND		5.0	0.37	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Dichlorobromomethane	ND		5.0	0.56	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Dichlorodifluoromethane	ND		5.0	0.67	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Ethyl ether	ND		5.0	0.59	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Ethylbenzene	ND		5.0	0.64	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
1,2-Dibromoethane	ND		5.0	0.86	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Isopropylbenzene	ND		5.0	0.68	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Methyl acetate	ND		5.0	0.90	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Methyl tert-butyl ether	ND		5.0	0.75	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Methylcyclohexane	ND		5.0	0.73	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Methylene Chloride	ND		5.0	0.67	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Styrene	ND		5.0	0.71	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Tetrachloroethene	ND		5.0	0.68	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Toluene	ND		5.0	0.73	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
trans-1,2-Dichloroethene	ND		5.0	0.60	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
trans-1,3-Dichloropropene	ND		5.0	0.60	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Trichloroethene	ND		5.0	0.66	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Trichlorofluoromethane	ND		5.0	0.92	ug/Kg		09/08/14 04:18	09/08/14 05:59	1
Vinyl chloride	ND		5.0	0.47	ug/Kg		09/08/14 04:18	09/08/14 05:59	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-117277/1-A
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 117277

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		52 - 124	09/08/14 04:18	09/08/14 05:59	1
4-Bromofluorobenzene (Surr)	92		63 - 120	09/08/14 04:18	09/08/14 05:59	1
Dibromofluoromethane (Surr)	98		68 - 121	09/08/14 04:18	09/08/14 05:59	1
Toluene-d8 (Surr)	92		72 - 127	09/08/14 04:18	09/08/14 05:59	1

Lab Sample ID: LCS 180-117277/2-A
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40.0	50.5		ug/Kg		126	67 - 126
1,1,2,2-Tetrachloroethane	40.0	39.2		ug/Kg		98	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	44.4		ug/Kg		111	55 - 130
1,1,2-Trichloroethane	40.0	42.3		ug/Kg		106	70 - 128
1,1-Dichloroethane	40.0	39.8		ug/Kg		100	66 - 124
1,1-Dichloroethene	40.0	42.7		ug/Kg		107	59 - 129
1,2,4-Trichlorobenzene	40.0	29.3		ug/Kg		73	51 - 136
1,2-Dibromo-3-Chloropropane	40.0	44.2		ug/Kg		111	35 - 136
1,2-Dichlorobenzene	40.0	37.5		ug/Kg		94	71 - 124
1,2-Dichloroethane	40.0	49.4		ug/Kg		123	61 - 127
1,2-Dichloropropane	40.0	35.1		ug/Kg		88	72 - 122
1,3-Dichlorobenzene	40.0	38.8		ug/Kg		97	75 - 118
1,4-Dichlorobenzene	40.0	38.4		ug/Kg		96	77 - 116
2-Butanone (MEK)	40.0	40.0		ug/Kg		100	35 - 149
2-Hexanone	40.0	48.2		ug/Kg		121	32 - 150
4-Methyl-2-pentanone (MIBK)	40.0	45.6		ug/Kg		114	44 - 148
Acetone	40.0	45.2		ug/Kg		113	20 - 150
Benzene	40.0	36.7		ug/Kg		92	77 - 120
Bromoform	40.0	46.0		ug/Kg		115	53 - 140
Bromomethane	40.0	65.2	*	ug/Kg		163	25 - 150
Carbon disulfide	40.0	39.5		ug/Kg		99	50 - 127
Carbon tetrachloride	40.0	51.2	*	ug/Kg		128	69 - 122
Chlorobenzene	40.0	38.9		ug/Kg		97	79 - 120
Chlorodibromomethane	40.0	47.9		ug/Kg		120	70 - 132
Chloroethane	40.0	77.7	*	ug/Kg		194	22 - 150
Chloroform	40.0	44.6		ug/Kg		112	72 - 120
Chloromethane	40.0	43.0		ug/Kg		107	44 - 131
cis-1,2-Dichloroethene	40.0	37.9		ug/Kg		95	80 - 118
cis-1,3-Dichloropropene	40.0	39.8		ug/Kg		99	73 - 120
Cyclohexane	40.0	38.4		ug/Kg		96	64 - 130
Dichlorobromomethane	40.0	45.6		ug/Kg		114	70 - 125
Dichlorodifluoromethane	40.0	44.7		ug/Kg		112	25 - 150
Ethylbenzene	40.0	38.0		ug/Kg		95	78 - 125
1,2-Dibromoethane	40.0	43.5		ug/Kg		109	70 - 131
Isopropylbenzene	40.0	38.8		ug/Kg		97	70 - 133
Methyl tert-butyl ether	40.0	47.7		ug/Kg		119	48 - 132
Methylcyclohexane	40.0	34.8		ug/Kg		87	66 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-117277/2-A
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	40.0	31.9		ug/Kg		80	58 - 127
Styrene	40.0	39.1		ug/Kg		98	83 - 129
Tetrachloroethene	40.0	37.7		ug/Kg		94	78 - 129
Toluene	40.0	37.8		ug/Kg		95	78 - 124
trans-1,2-Dichloroethene	40.0	43.0		ug/Kg		108	77 - 121
trans-1,3-Dichloropropene	40.0	46.7		ug/Kg		117	74 - 129
Trichloroethene	40.0	35.8		ug/Kg		90	76 - 119
Trichlorofluoromethane	40.0	55.7		ug/Kg		139	20 - 150
Vinyl chloride	40.0	41.6		ug/Kg		104	63 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*109*		*52 - 124*
4-Bromofluorobenzene (Surr)	*88*		*63 - 120*
Dibromofluoromethane (Surr)	*96*		*68 - 121*
Toluene-d8 (Surr)	*84*		*72 - 127*

Lab Sample ID: 180-36441-4 MS
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		58.8	86.4	F1	ug/Kg	☼	147	67 - 126
1,1,2,2-Tetrachloroethane	ND		58.8	68.6		ug/Kg	☼	117	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		58.8	65.6		ug/Kg	☼	111	55 - 130
1,1,2-Trichloroethane	ND		58.8	174	F1	ug/Kg	☼	295	70 - 128
1,1-Dichloroethane	ND		58.8	77.7	F1	ug/Kg	☼	132	66 - 124
1,1-Dichloroethene	ND		58.8	80.6	F1	ug/Kg	☼	137	59 - 129
1,2,4-Trichlorobenzene	ND	*	58.8	28.4	* F1	ug/Kg	☼	48	51 - 136
1,2-Dibromo-3-Chloropropane	ND	*	58.8	67.6	*	ug/Kg	☼	115	35 - 136
1,2-Dichlorobenzene	ND	*	58.8	61.5	*	ug/Kg	☼	105	71 - 124
1,2-Dichloroethane	ND		58.8	82.2	F1	ug/Kg	☼	140	61 - 127
1,2-Dichloropropane	ND		58.8	62.3		ug/Kg	☼	106	72 - 122
1,3-Dichlorobenzene	ND	*	58.8	60.8	*	ug/Kg	☼	103	75 - 118
1,4-Dichlorobenzene	ND	*	58.8	62.8	*	ug/Kg	☼	107	77 - 116
2-Butanone (MEK)	ND		58.8	64.4		ug/Kg	☼	109	35 - 149
2-Hexanone	ND		58.8	167	F1	ug/Kg	☼	283	32 - 150
4-Methyl-2-pentanone (MIBK)	ND		58.8	78.3		ug/Kg	☼	133	44 - 148
Acetone	19	J	58.8	106		ug/Kg	☼	148	20 - 150
Benzene	ND		58.8	65.9		ug/Kg	☼	112	77 - 120
Bromoform	ND		58.8	65.7		ug/Kg	☼	112	53 - 140
Bromomethane	ND	*	58.8	142	F1	ug/Kg	☼	241	25 - 150
Carbon disulfide	ND		58.8	83.0	F1	ug/Kg	☼	141	50 - 127
Carbon tetrachloride	ND	*	58.8	79.1	F1	ug/Kg	☼	134	69 - 122
Chlorobenzene	ND		58.8	65.8		ug/Kg	☼	112	79 - 120
Chlorodibromomethane	ND		58.8	84.8	F1	ug/Kg	☼	144	70 - 132
Chloroethane	ND	*	58.8	167	F1	ug/Kg	☼	283	22 - 150
Chloroform	ND		58.8	81.8	F1	ug/Kg	☼	139	72 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-4 MS
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	ND		58.8	93.0	F1	ug/Kg	☼	158	44 - 131
cis-1,2-Dichloroethene	ND		58.8	71.9	F1	ug/Kg	☼	122	80 - 118
cis-1,3-Dichloropropene	ND		58.8	64.9		ug/Kg	☼	110	73 - 120
Cyclohexane	37		58.8	115	F1	ug/Kg	☼	133	64 - 130
Dichlorobromomethane	ND		58.8	74.7	F1	ug/Kg	☼	127	70 - 125
Dichlorodifluoromethane	ND		58.8	97.5	F1	ug/Kg	☼	166	25 - 150
Ethylbenzene	2.2	J	58.8	60.2		ug/Kg	☼	98	78 - 125
1,2-Dibromoethane	ND		58.8	76.3		ug/Kg	☼	130	70 - 131
Isopropylbenzene	2.8	J	58.8	50.8		ug/Kg	☼	82	70 - 133
Methyl tert-butyl ether	ND		58.8	78.5	F1	ug/Kg	☼	133	48 - 132
Methylcyclohexane	100		58.8	178		ug/Kg	☼	124	66 - 135
Methylene Chloride	ND		58.8	65.8		ug/Kg	☼	112	58 - 127
Styrene	ND		58.8	58.4		ug/Kg	☼	99	83 - 129
Tetrachloroethene	ND		58.8	56.6		ug/Kg	☼	96	78 - 129
Toluene	ND		58.8	73.6	F1	ug/Kg	☼	125	78 - 124
trans-1,2-Dichloroethene	ND		58.8	75.0	F1	ug/Kg	☼	127	77 - 121
trans-1,3-Dichloropropene	ND		58.8	89.5	F1	ug/Kg	☼	152	74 - 129
Trichloroethene	ND		58.8	58.0		ug/Kg	☼	99	76 - 119
Trichlorofluoromethane	ND		58.8	110	F1	ug/Kg	☼	187	20 - 150
Vinyl chloride	ND		58.8	89.4	F1	ug/Kg	☼	152	63 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*114*		*52 - 124*
4-Bromofluorobenzene (Surr)	*90*		*63 - 120*
Dibromofluoromethane (Surr)	*108*		*68 - 121*
Toluene-d8 (Surr)	*116*		*72 - 127*

Lab Sample ID: 180-36441-4 MSD
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		58.8	89.6	F1	ug/Kg	☼	152	67 - 126	4	31
1,1,2,2-Tetrachloroethane	ND		58.8	57.8		ug/Kg	☼	98	60 - 139	17	24
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		58.8	69.2		ug/Kg	☼	118	55 - 130	5	37
1,1,2-Trichloroethane	ND		58.8	181	F1	ug/Kg	☼	308	70 - 128	4	22
1,1-Dichloroethane	ND		58.8	79.6	F1	ug/Kg	☼	135	66 - 124	3	23
1,1-Dichloroethene	ND		58.8	87.9	F1	ug/Kg	☼	149	59 - 129	9	25
1,2,4-Trichlorobenzene	ND	*	58.8	32.6	*	ug/Kg	☼	55	51 - 136	14	40
1,2-Dibromo-3-Chloropropane	ND	*	58.8	78.2	*	ug/Kg	☼	133	35 - 136	15	40
1,2-Dichlorobenzene	ND	*	58.8	65.6	*	ug/Kg	☼	112	71 - 124	7	22
1,2-Dichloroethane	ND		58.8	81.4	F1	ug/Kg	☼	138	61 - 127	1	23
1,2-Dichloropropane	ND		58.8	59.1		ug/Kg	☼	100	72 - 122	5	20
1,3-Dichlorobenzene	ND	*	58.8	63.6	*	ug/Kg	☼	108	75 - 118	4	20
1,4-Dichlorobenzene	ND	*	58.8	66.9	*	ug/Kg	☼	114	77 - 116	6	20
2-Butanone (MEK)	ND		58.8	48.4		ug/Kg	☼	82	35 - 149	28	36
2-Hexanone	ND		58.8	163	F1	ug/Kg	☼	278	32 - 150	2	32

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-4 MSD
Matrix: Solid
Analysis Batch: 117276

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 117277

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)	ND		58.8	75.7		ug/Kg	☼	129	44 - 148	3	30
Acetone	19	J	58.8	70.4		ug/Kg	☼	87	20 - 150	40	40
Benzene	ND		58.8	66.7		ug/Kg	☼	113	77 - 120	1	20
Bromoform	ND		58.8	61.3		ug/Kg	☼	104	53 - 140	7	23
Bromomethane	ND	*	58.8	150	F1	ug/Kg	☼	255	25 - 150	6	40
Carbon disulfide	ND		58.8	87.4	F1	ug/Kg	☼	148	50 - 127	5	23
Carbon tetrachloride	ND	*	58.8	79.1	F1	ug/Kg	☼	134	69 - 122	0	22
Chlorobenzene	ND		58.8	65.3		ug/Kg	☼	111	79 - 120	1	20
Chlorodibromomethane	ND		58.8	87.9	F1	ug/Kg	☼	149	70 - 132	4	20
Chloroethane	ND	*	58.8	179	F1	ug/Kg	☼	304	22 - 150	7	40
Chloroform	ND		58.8	84.6	F1	ug/Kg	☼	144	72 - 120	3	25
Chloromethane	ND		58.8	95.1	F1	ug/Kg	☼	162	44 - 131	2	27
cis-1,2-Dichloroethene	ND		58.8	72.0	F1	ug/Kg	☼	122	80 - 118	0	20
cis-1,3-Dichloropropene	ND		58.8	61.6		ug/Kg	☼	105	73 - 120	5	20
Cyclohexane	37		58.8	111		ug/Kg	☼	127	64 - 130	3	21
Dichlorobromomethane	ND		58.8	74.5	F1	ug/Kg	☼	127	70 - 125	0	21
Dichlorodifluoromethane	ND		58.8	103	F1	ug/Kg	☼	176	25 - 150	6	34
Ethylbenzene	2.2	J	58.8	57.4		ug/Kg	☼	94	78 - 125	5	21
1,2-Dibromoethane	ND		58.8	75.3		ug/Kg	☼	128	70 - 131	1	20
Isopropylbenzene	2.8	J	58.8	45.4		ug/Kg	☼	72	70 - 133	11	22
Methyl tert-butyl ether	ND		58.8	76.8		ug/Kg	☼	130	48 - 132	2	36
Methylcyclohexane	100		58.8	169		ug/Kg	☼	109	66 - 135	5	23
Methylene Chloride	ND		58.8	69.7		ug/Kg	☼	118	58 - 127	6	28
Styrene	ND		58.8	55.9		ug/Kg	☼	95	83 - 129	4	20
Tetrachloroethene	ND		58.8	54.6		ug/Kg	☼	93	78 - 129	4	20
Toluene	ND		58.8	75.5	F1	ug/Kg	☼	128	78 - 124	3	21
trans-1,2-Dichloroethene	ND		58.8	79.3	F1	ug/Kg	☼	135	77 - 121	6	20
trans-1,3-Dichloropropene	ND		58.8	92.8	F1	ug/Kg	☼	158	74 - 129	4	20
Trichloroethene	ND		58.8	58.2		ug/Kg	☼	99	76 - 119	0	21
Trichlorofluoromethane	ND		58.8	99.4	F1	ug/Kg	☼	169	20 - 150	10	40
Vinyl chloride	ND		58.8	94.7	F1	ug/Kg	☼	161	63 - 124	6	27

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*113*		*52 - 124*
4-Bromofluorobenzene (Surr)	*79*		*63 - 120*
Dibromofluoromethane (Surr)	*115*		*68 - 121*
Toluene-d8 (Surr)	*122*		*72 - 127*

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-117991/6
Matrix: Water
Analysis Batch: 117991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/14/14 13:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/14/14 13:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/14/14 13:43	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-117991/6
Matrix: Water
Analysis Batch: 117991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/14/14 13:43	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/14/14 13:43	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/14/14 13:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/14/14 13:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/14/14 13:43	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/14/14 13:43	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/14/14 13:43	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/14/14 13:43	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/14/14 13:43	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/14/14 13:43	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/14/14 13:43	1
2-Hexanone	ND		5.0	0.16	ug/L			09/14/14 13:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/14/14 13:43	1
Acetone	ND		5.0	2.5	ug/L			09/14/14 13:43	1
Benzene	ND		1.0	0.11	ug/L			09/14/14 13:43	1
Bromoform	ND		1.0	0.19	ug/L			09/14/14 13:43	1
Bromomethane	ND		1.0	0.31	ug/L			09/14/14 13:43	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/14/14 13:43	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/14/14 13:43	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/14/14 13:43	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/14/14 13:43	1
Chloroethane	ND		1.0	0.21	ug/L			09/14/14 13:43	1
Chloroform	ND		1.0	0.17	ug/L			09/14/14 13:43	1
Chloromethane	ND		1.0	0.28	ug/L			09/14/14 13:43	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/14/14 13:43	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/14/14 13:43	1
Cyclohexane	ND		1.0	0.25	ug/L			09/14/14 13:43	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/14/14 13:43	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/14/14 13:43	1
Ethyl ether	ND		1.0	0.082	ug/L			09/14/14 13:43	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/14/14 13:43	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/14/14 13:43	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/14/14 13:43	1
Methyl acetate	ND		1.0	0.14	ug/L			09/14/14 13:43	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/14/14 13:43	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/14/14 13:43	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/14/14 13:43	1
Styrene	ND		1.0	0.097	ug/L			09/14/14 13:43	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/14/14 13:43	1
Toluene	ND		1.0	0.15	ug/L			09/14/14 13:43	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/14/14 13:43	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/14/14 13:43	1
Trichloroethene	ND		1.0	0.14	ug/L			09/14/14 13:43	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/14/14 13:43	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/14/14 13:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*119*		*64 - 135*		*09/14/14 13:43*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-117991/6
Matrix: Water
Analysis Batch: 117991

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 118		09/14/14 13:43	1
Dibromofluoromethane (Surr)	115		70 - 128		09/14/14 13:43	1
Toluene-d8 (Surr)	103		71 - 118		09/14/14 13:43	1

Lab Sample ID: LCS 180-117991/7
Matrix: Water
Analysis Batch: 117991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	8.94		ug/L		89	63 - 133
1,1,2,2-Tetrachloroethane	10.0	10.8		ug/L		108	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.04		ug/L		90	46 - 148
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	77 - 127
1,1-Dichloroethane	10.0	9.79		ug/L		98	73 - 126
1,1-Dichloroethene	10.0	9.28		ug/L		93	65 - 136
1,2,4-Trichlorobenzene	10.0	10.2		ug/L		102	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	37 - 133
1,2-Dichlorobenzene	10.0	9.60		ug/L		96	77 - 120
1,2-Dichloroethane	10.0	9.60		ug/L		96	68 - 132
1,2-Dichloropropane	10.0	9.78		ug/L		98	76 - 124
1,3-Dichlorobenzene	10.0	9.74		ug/L		97	76 - 120
1,4-Dichlorobenzene	10.0	9.78		ug/L		98	77 - 120
2-Butanone (MEK)	20.0	18.8		ug/L		94	39 - 138
2-Hexanone	20.0	19.4		ug/L		97	25 - 132
4-Methyl-2-pentanone (MIBK)	20.0	18.9		ug/L		95	45 - 145
Acetone	20.0	17.6		ug/L		88	22 - 150
Benzene	10.0	9.84		ug/L		98	80 - 120
Bromoform	10.0	10.8		ug/L		108	46 - 150
Bromomethane	10.0	8.91		ug/L		89	33 - 150
Carbon disulfide	10.0	9.11		ug/L		91	54 - 132
Carbon tetrachloride	10.0	9.96		ug/L		100	55 - 150
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Chlorodibromomethane	10.0	11.1		ug/L		111	60 - 140
Chloroethane	10.0	8.36		ug/L		84	36 - 142
Chloroform	10.0	9.45		ug/L		95	72 - 127
Chloromethane	10.0	9.06		ug/L		91	50 - 139
cis-1,2-Dichloroethene	10.0	9.42		ug/L		94	70 - 120
cis-1,3-Dichloropropene	10.0	9.78		ug/L		98	66 - 120
Cyclohexane	10.0	9.80		ug/L		98	45 - 142
Dichlorobromomethane	10.0	9.18		ug/L		92	66 - 130
Dichlorodifluoromethane	10.0	9.20		ug/L		92	13 - 150
Ethylbenzene	10.0	10.3		ug/L		103	72 - 126
1,2-Dibromoethane	10.0	11.1		ug/L		111	74 - 123
Isopropylbenzene	10.0	10.8		ug/L		108	58 - 130
Methyl tert-butyl ether	10.0	9.47		ug/L		95	64 - 123
Methylcyclohexane	10.0	8.97		ug/L		90	45 - 145
Methylene Chloride	10.0	7.94		ug/L		79	63 - 129

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-117991/7
Matrix: Water
Analysis Batch: 117991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	10.0	10.2		ug/L		102	71 - 127
Tetrachloroethene	10.0	10.0		ug/L		100	70 - 135
Toluene	10.0	10.5		ug/L		105	80 - 123
trans-1,2-Dichloroethene	10.0	9.68		ug/L		97	73 - 126
trans-1,3-Dichloropropene	10.0	11.5		ug/L		115	65 - 125
Trichloroethene	10.0	9.89		ug/L		99	73 - 120
Trichlorofluoromethane	10.0	8.06		ug/L		81	44 - 150
Vinyl chloride	10.0	8.76		ug/L		88	53 - 138

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 135*
4-Bromofluorobenzene (Surr)	*112*		*70 - 118*
Dibromofluoromethane (Surr)	*104*		*70 - 128*
Toluene-d8 (Surr)	*113*		*71 - 118*

Lab Sample ID: MB 180-118072/5
Matrix: Water
Analysis Batch: 118072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/15/14 12:37	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/15/14 12:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/15/14 12:37	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/15/14 12:37	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/15/14 12:37	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/15/14 12:37	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/15/14 12:37	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/15/14 12:37	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/15/14 12:37	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/15/14 12:37	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/15/14 12:37	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/15/14 12:37	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/15/14 12:37	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/15/14 12:37	1
2-Hexanone	ND		5.0	0.16	ug/L			09/15/14 12:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/15/14 12:37	1
Acetone	ND		5.0	2.5	ug/L			09/15/14 12:37	1
Benzene	ND		1.0	0.11	ug/L			09/15/14 12:37	1
Bromoform	ND		1.0	0.19	ug/L			09/15/14 12:37	1
Bromomethane	ND		1.0	0.31	ug/L			09/15/14 12:37	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/15/14 12:37	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/15/14 12:37	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/15/14 12:37	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/15/14 12:37	1
Chloroethane	ND		1.0	0.21	ug/L			09/15/14 12:37	1
Chloroform	ND		1.0	0.17	ug/L			09/15/14 12:37	1
Chloromethane	ND		1.0	0.28	ug/L			09/15/14 12:37	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/15/14 12:37	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-118072/5
Matrix: Water
Analysis Batch: 118072

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/15/14 12:37	1
Cyclohexane	ND		1.0	0.25	ug/L			09/15/14 12:37	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/15/14 12:37	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/15/14 12:37	1
Ethyl ether	ND		1.0	0.082	ug/L			09/15/14 12:37	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/15/14 12:37	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/15/14 12:37	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/15/14 12:37	1
Methyl acetate	ND		1.0	0.14	ug/L			09/15/14 12:37	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/15/14 12:37	1
Methylcyclohexane	ND		1.0	0.26	ug/L			09/15/14 12:37	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/15/14 12:37	1
Styrene	ND		1.0	0.097	ug/L			09/15/14 12:37	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/15/14 12:37	1
Toluene	ND		1.0	0.15	ug/L			09/15/14 12:37	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/15/14 12:37	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/15/14 12:37	1
Trichloroethene	ND		1.0	0.14	ug/L			09/15/14 12:37	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/15/14 12:37	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/15/14 12:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 135*		*09/15/14 12:37*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*09/15/14 12:37*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*09/15/14 12:37*	*1*
Toluene-d8 (Surr)	*107*		*71 - 118*		*09/15/14 12:37*	*1*

Lab Sample ID: LCS 180-118072/8
Matrix: Water
Analysis Batch: 118072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.0		ug/L		100	63 - 133
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.74		ug/L		97	46 - 148
1,1,2-Trichloroethane	10.0	11.1		ug/L		111	77 - 127
1,1-Dichloroethane	10.0	10.2		ug/L		102	73 - 126
1,1-Dichloroethene	10.0	10.1		ug/L		101	65 - 136
1,2,4-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	9.58		ug/L		96	37 - 133
1,2-Dichlorobenzene	10.0	10.8		ug/L		108	77 - 120
1,2-Dichloroethane	10.0	10.1		ug/L		101	68 - 132
1,2-Dichloropropane	10.0	9.96		ug/L		100	76 - 124
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	76 - 120
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	77 - 120
2-Butanone (MEK)	10.0	11.9		ug/L		119	39 - 138
2-Hexanone	10.0	10.8		ug/L		108	25 - 132

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-118072/8
Matrix: Water
Analysis Batch: 118072

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	10.0	10.1		ug/L		101	45 - 145
Acetone	10.0	11.3		ug/L		113	22 - 150
Benzene	10.0	10.4		ug/L		104	80 - 120
Bromoform	10.0	8.74		ug/L		87	46 - 150
Bromomethane	10.0	9.70		ug/L		97	33 - 150
Carbon disulfide	10.0	9.78		ug/L		98	54 - 132
Carbon tetrachloride	10.0	9.76		ug/L		98	55 - 150
Chlorobenzene	10.0	10.9		ug/L		109	80 - 120
Chlorodibromomethane	10.0	10.1		ug/L		101	60 - 140
Chloroethane	10.0	8.92		ug/L		89	36 - 142
Chloroform	10.0	10.3		ug/L		103	72 - 127
Chloromethane	10.0	8.78		ug/L		88	50 - 139
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 120
cis-1,3-Dichloropropene	10.0	8.79		ug/L		88	66 - 120
Cyclohexane	10.0	9.89		ug/L		99	45 - 142
Dichlorobromomethane	10.0	9.24		ug/L		92	66 - 130
Dichlorodifluoromethane	10.0	10.6		ug/L		106	13 - 150
Ethylbenzene	10.0	11.0		ug/L		110	72 - 126
1,2-Dibromoethane	10.0	10.7		ug/L		107	74 - 123
Isopropylbenzene	10.0	11.3		ug/L		113	58 - 130
Methyl tert-butyl ether	10.0	10.1		ug/L		101	64 - 123
Methylcyclohexane	10.0	9.75		ug/L		98	45 - 145
Methylene Chloride	10.0	9.56		ug/L		96	63 - 129
Styrene	10.0	10.8		ug/L		108	71 - 127
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 135
Toluene	10.0	10.9		ug/L		109	80 - 123
trans-1,2-Dichloroethene	10.0	10.4		ug/L		104	73 - 126
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	65 - 125
Trichloroethene	10.0	9.88		ug/L		99	73 - 120
Trichlorofluoromethane	10.0	9.19		ug/L		92	44 - 150
Vinyl chloride	10.0	9.35		ug/L		94	53 - 138

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 135*
4-Bromofluorobenzene (Surr)	*104*		*70 - 118*
Dibromofluoromethane (Surr)	*97*		*70 - 128*
Toluene-d8 (Surr)	*105*		*71 - 118*

Lab Sample ID: 180-36441-13 MS
Matrix: Water
Analysis Batch: 118072

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	9.24		ug/L		92	63 - 133
1,1,2,2-Tetrachloroethane	ND		10.0	10.9		ug/L		109	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	9.24		ug/L		92	46 - 148
1,1,2-Trichloroethane	ND		10.0	10.4		ug/L		104	77 - 127

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-13 MS
Matrix: Water
Analysis Batch: 118072

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND		10.0	9.67		ug/L		97	73 - 126
1,1-Dichloroethene	ND		10.0	9.33		ug/L		93	65 - 136
1,2,4-Trichlorobenzene	ND		10.0	10.1		ug/L		101	60 - 127
1,2-Dibromo-3-Chloropropane	ND		10.0	8.94		ug/L		89	37 - 133
1,2-Dichlorobenzene	1.6		10.0	11.5		ug/L		99	77 - 120
1,2-Dichloroethane	ND		10.0	9.65		ug/L		97	68 - 132
1,2-Dichloropropane	ND		10.0	9.29		ug/L		93	76 - 124
1,3-Dichlorobenzene	ND		10.0	9.83		ug/L		98	76 - 120
1,4-Dichlorobenzene	0.36	J	10.0	10.4		ug/L		101	77 - 120
2-Butanone (MEK)	ND		10.0	11.3		ug/L		113	39 - 138
2-Hexanone	ND		10.0	11.2		ug/L		112	25 - 132
4-Methyl-2-pentanone (MIBK)	ND		10.0	10.5		ug/L		105	45 - 145
Acetone	5.4		10.0	17.1		ug/L		117	22 - 150
Benzene	0.12	J	10.0	9.63		ug/L		95	80 - 120
Bromoform	ND		10.0	8.44		ug/L		84	46 - 150
Bromomethane	ND		10.0	9.32		ug/L		93	33 - 150
Carbon disulfide	ND		10.0	8.99		ug/L		90	54 - 132
Carbon tetrachloride	ND		10.0	9.10		ug/L		91	55 - 150
Chlorobenzene	0.88	J	10.0	11.2		ug/L		103	80 - 120
Chlorodibromomethane	ND		10.0	9.26		ug/L		93	60 - 140
Chloroethane	ND		10.0	9.06		ug/L		91	36 - 142
Chloroform	ND		10.0	9.66		ug/L		97	72 - 127
Chloromethane	ND		10.0	8.70		ug/L		87	50 - 139
cis-1,2-Dichloroethene	ND		10.0	9.47		ug/L		95	70 - 120
cis-1,3-Dichloropropene	ND		10.0	8.90		ug/L		89	66 - 120
Cyclohexane	ND		10.0	9.15		ug/L		92	45 - 142
Dichlorobromomethane	ND		10.0	8.89		ug/L		89	66 - 130
Dichlorodifluoromethane	ND		10.0	9.96		ug/L		100	13 - 150
Ethylbenzene	ND		10.0	10.2		ug/L		102	72 - 126
1,2-Dibromoethane	ND		10.0	10.2		ug/L		102	74 - 123
Isopropylbenzene	ND		10.0	10.5		ug/L		105	58 - 130
Methyl tert-butyl ether	ND		10.0	10.3		ug/L		103	64 - 123
Methylcyclohexane	ND		10.0	8.99		ug/L		90	45 - 145
Methylene Chloride	ND		10.0	9.23		ug/L		92	63 - 129
Styrene	ND		10.0	10.2		ug/L		102	71 - 127
Tetrachloroethene	ND		10.0	9.80		ug/L		98	70 - 135
Toluene	ND		10.0	10.2		ug/L		102	80 - 123
trans-1,2-Dichloroethene	ND		10.0	9.86		ug/L		99	73 - 126
trans-1,3-Dichloropropene	ND		10.0	10.0		ug/L		100	65 - 125
Trichloroethene	ND		10.0	9.29		ug/L		93	73 - 120
Trichlorofluoromethane	ND		10.0	8.18		ug/L		82	44 - 150
Vinyl chloride	ND		10.0	8.52		ug/L		85	53 - 138

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*
4-Bromofluorobenzene (Surr)	*101*		*70 - 118*
Dibromofluoromethane (Surr)	*100*		*70 - 128*
Toluene-d8 (Surr)	*105*		*71 - 118*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-13 MSD
Matrix: Water
Analysis Batch: 118072

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		10.0	8.74		ug/L		87	63 - 133	6	35
1,1,2,2-Tetrachloroethane	ND		10.0	11.1		ug/L		111	62 - 125	2	35
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.95		ug/L		89	46 - 148	3	35
1,1,2-Trichloroethane	ND		10.0	10.7		ug/L		107	77 - 127	3	35
1,1-Dichloroethane	ND		10.0	9.50		ug/L		95	73 - 126	2	35
1,1-Dichloroethene	ND		10.0	8.76		ug/L		88	65 - 136	6	35
1,2,4-Trichlorobenzene	ND		10.0	10.0		ug/L		100	60 - 127	1	35
1,2-Dibromo-3-Chloropropane	ND		10.0	9.09		ug/L		91	37 - 133	2	35
1,2-Dichlorobenzene	1.6		10.0	11.9		ug/L		103	77 - 120	3	24
1,2-Dichloroethane	ND		10.0	9.54		ug/L		95	68 - 132	1	32
1,2-Dichloropropane	ND		10.0	8.96		ug/L		90	76 - 124	4	34
1,3-Dichlorobenzene	ND		10.0	9.98		ug/L		100	76 - 120	2	24
1,4-Dichlorobenzene	0.36	J	10.0	10.3		ug/L		99	77 - 120	1	24
2-Butanone (MEK)	ND		10.0	12.3		ug/L		123	39 - 138	8	35
2-Hexanone	ND		10.0	11.7		ug/L		117	25 - 132	5	35
4-Methyl-2-pentanone (MIBK)	ND		10.0	10.4		ug/L		104	45 - 145	1	35
Acetone	5.4		10.0	19.4		ug/L		139	22 - 150	12	35
Benzene	0.12	J	10.0	9.42		ug/L		93	80 - 120	2	32
Bromoform	ND		10.0	8.51		ug/L		85	46 - 150	1	35
Bromomethane	ND		10.0	9.10		ug/L		91	33 - 150	2	35
Carbon disulfide	ND		10.0	8.47		ug/L		85	54 - 132	6	35
Carbon tetrachloride	ND		10.0	8.71		ug/L		87	55 - 150	4	35
Chlorobenzene	0.88	J	10.0	11.0		ug/L		101	80 - 120	1	29
Chlorodibromomethane	ND		10.0	9.21		ug/L		92	60 - 140	1	35
Chloroethane	ND		10.0	8.32		ug/L		83	36 - 142	9	35
Chloroform	ND		10.0	9.40		ug/L		94	72 - 127	3	35
Chloromethane	ND		10.0	8.60		ug/L		86	50 - 139	1	35
cis-1,2-Dichloroethene	ND		10.0	9.24		ug/L		92	70 - 120	2	35
cis-1,3-Dichloropropene	ND		10.0	8.36		ug/L		84	66 - 120	6	35
Cyclohexane	ND		10.0	8.88		ug/L		89	45 - 142	3	35
Dichlorobromomethane	ND		10.0	8.53		ug/L		85	66 - 130	4	35
Dichlorodifluoromethane	ND		10.0	9.11		ug/L		91	13 - 150	9	35
Ethylbenzene	ND		10.0	10.1		ug/L		101	72 - 126	1	33
1,2-Dibromoethane	ND		10.0	10.2		ug/L		102	74 - 123	0	35
Isopropylbenzene	ND		10.0	10.2		ug/L		102	58 - 130	3	35
Methyl tert-butyl ether	ND		10.0	9.74		ug/L		97	64 - 123	6	35
Methylcyclohexane	ND		10.0	8.74		ug/L		87	45 - 145	3	35
Methylene Chloride	ND		10.0	9.16		ug/L		92	63 - 129	1	35
Styrene	ND		10.0	9.72		ug/L		97	71 - 127	5	34
Tetrachloroethene	ND		10.0	10.3		ug/L		103	70 - 135	5	35
Toluene	ND		10.0	9.95		ug/L		99	80 - 123	2	35
trans-1,2-Dichloroethene	ND		10.0	9.46		ug/L		95	73 - 126	4	35
trans-1,3-Dichloropropene	ND		10.0	10.0		ug/L		100	65 - 125	0	35
Trichloroethene	ND		10.0	8.92		ug/L		89	73 - 120	4	35
Trichlorofluoromethane	ND		10.0	8.03		ug/L		80	44 - 150	2	35
Vinyl chloride	ND		10.0	8.40		ug/L		84	53 - 138	1	35

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-13 MSD
Matrix: Water
Analysis Batch: 118072

Client Sample ID: SG-4
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*
4-Bromofluorobenzene (Surr)	*99*		*70 - 118*
Dibromofluoromethane (Surr)	*94*		*70 - 128*
Toluene-d8 (Surr)	*102*		*71 - 118*

Lab Sample ID: MB 180-118218/6
Matrix: Water
Analysis Batch: 118218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			09/16/14 15:31	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			09/16/14 15:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			09/16/14 15:31	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			09/16/14 15:31	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			09/16/14 15:31	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			09/16/14 15:31	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			09/16/14 15:31	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			09/16/14 15:31	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			09/16/14 15:31	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			09/16/14 15:31	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			09/16/14 15:31	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			09/16/14 15:31	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			09/16/14 15:31	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			09/16/14 15:31	1
2-Hexanone	ND		5.0	0.16	ug/L			09/16/14 15:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			09/16/14 15:31	1
Acetone	ND		5.0	2.5	ug/L			09/16/14 15:31	1
Benzene	ND		1.0	0.11	ug/L			09/16/14 15:31	1
Bromoform	ND		1.0	0.19	ug/L			09/16/14 15:31	1
Bromomethane	ND		1.0	0.31	ug/L			09/16/14 15:31	1
Carbon disulfide	ND		1.0	0.21	ug/L			09/16/14 15:31	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			09/16/14 15:31	1
Chlorobenzene	ND		1.0	0.14	ug/L			09/16/14 15:31	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			09/16/14 15:31	1
Chloroethane	ND		1.0	0.21	ug/L			09/16/14 15:31	1
Chloroform	ND		1.0	0.17	ug/L			09/16/14 15:31	1
Chloromethane	ND		1.0	0.28	ug/L			09/16/14 15:31	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			09/16/14 15:31	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			09/16/14 15:31	1
Cyclohexane	ND		1.0	0.25	ug/L			09/16/14 15:31	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			09/16/14 15:31	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			09/16/14 15:31	1
Ethyl ether	ND		1.0	0.082	ug/L			09/16/14 15:31	1
Ethylbenzene	ND		1.0	0.23	ug/L			09/16/14 15:31	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			09/16/14 15:31	1
Isopropylbenzene	ND		1.0	0.16	ug/L			09/16/14 15:31	1
Methyl acetate	ND		1.0	0.14	ug/L			09/16/14 15:31	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			09/16/14 15:31	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-118218/6
Matrix: Water
Analysis Batch: 118218

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			09/16/14 15:31	1
Methylene Chloride	ND		1.0	0.13	ug/L			09/16/14 15:31	1
Styrene	ND		1.0	0.097	ug/L			09/16/14 15:31	1
Tetrachloroethene	ND		1.0	0.15	ug/L			09/16/14 15:31	1
Toluene	ND		1.0	0.15	ug/L			09/16/14 15:31	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			09/16/14 15:31	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			09/16/14 15:31	1
Trichloroethene	ND		1.0	0.14	ug/L			09/16/14 15:31	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			09/16/14 15:31	1
Vinyl chloride	ND		1.0	0.23	ug/L			09/16/14 15:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*09/16/14 15:31*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*09/16/14 15:31*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 128*		*09/16/14 15:31*	*1*
Toluene-d8 (Surr)	*108*		*71 - 118*		*09/16/14 15:31*	*1*

Lab Sample ID: LCS 180-118218/9
Matrix: Water
Analysis Batch: 118218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	9.59		ug/L		96	63 - 133
1,1,2,2-Tetrachloroethane	10.0	10.8		ug/L		108	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.78		ug/L		98	46 - 148
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	77 - 127
1,1-Dichloroethane	10.0	10.2		ug/L		102	73 - 126
1,1-Dichloroethene	10.0	9.86		ug/L		99	65 - 136
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	8.82		ug/L		88	37 - 133
1,2-Dichlorobenzene	10.0	10.6		ug/L		106	77 - 120
1,2-Dichloroethane	10.0	9.99		ug/L		100	68 - 132
1,2-Dichloropropane	10.0	9.73		ug/L		97	76 - 124
1,3-Dichlorobenzene	10.0	10.5		ug/L		105	76 - 120
1,4-Dichlorobenzene	10.0	10.6		ug/L		106	77 - 120
2-Butanone (MEK)	20.0	20.3		ug/L		102	39 - 138
2-Hexanone	20.0	20.3		ug/L		102	25 - 132
4-Methyl-2-pentanone (MIBK)	20.0	18.8		ug/L		94	45 - 145
Acetone	20.0	17.6		ug/L		88	22 - 150
Benzene	10.0	9.92		ug/L		99	80 - 120
Bromoform	10.0	8.19		ug/L		82	46 - 150
Bromomethane	10.0	10.1		ug/L		101	33 - 150
Carbon disulfide	10.0	9.28		ug/L		93	54 - 132
Carbon tetrachloride	10.0	9.44		ug/L		94	55 - 150
Chlorobenzene	10.0	10.3		ug/L		103	80 - 120
Chlorodibromomethane	10.0	9.30		ug/L		93	60 - 140
Chloroethane	10.0	9.78		ug/L		98	36 - 142

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-118218/9
Matrix: Water
Analysis Batch: 118218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	10.0	10.1		ug/L		101	72 - 127
Chloromethane	10.0	9.41		ug/L		94	50 - 139
cis-1,2-Dichloroethene	10.0	10.1		ug/L		101	70 - 120
cis-1,3-Dichloropropene	10.0	8.76		ug/L		88	66 - 120
Cyclohexane	10.0	9.82		ug/L		98	45 - 142
Dichlorobromomethane	10.0	8.84		ug/L		88	66 - 130
Dichlorodifluoromethane	10.0	10.5		ug/L		105	13 - 150
Ethylbenzene	10.0	10.4		ug/L		104	72 - 126
1,2-Dibromoethane	10.0	9.95		ug/L		99	74 - 123
Isopropylbenzene	10.0	10.8		ug/L		108	58 - 130
Methyl tert-butyl ether	10.0	10.1		ug/L		101	64 - 123
Methylcyclohexane	10.0	9.78		ug/L		98	45 - 145
Methylene Chloride	10.0	9.19		ug/L		92	63 - 129
Styrene	10.0	10.1		ug/L		101	71 - 127
Tetrachloroethene	10.0	10.3		ug/L		103	70 - 135
Toluene	10.0	10.3		ug/L		103	80 - 123
trans-1,2-Dichloroethene	10.0	10.2		ug/L		102	73 - 126
trans-1,3-Dichloropropene	10.0	9.69		ug/L		97	65 - 125
Trichloroethene	10.0	10.0		ug/L		100	73 - 120
Trichlorofluoromethane	10.0	8.93		ug/L		89	44 - 150
Vinyl chloride	10.0	9.18		ug/L		92	53 - 138

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*
Dibromofluoromethane (Surr)	*98*		*70 - 128*
Toluene-d8 (Surr)	*103*		*71 - 118*

Lab Sample ID: 180-36441-14 MS
Matrix: Water
Analysis Batch: 118218

Client Sample ID: SG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	9.07		ug/L		91	63 - 133
1,1,2,2-Tetrachloroethane	ND		10.0	11.0		ug/L		110	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	9.45		ug/L		94	46 - 148
1,1,2-Trichloroethane	ND		10.0	10.0		ug/L		100	77 - 127
1,1-Dichloroethane	ND		10.0	9.96		ug/L		100	73 - 126
1,1-Dichloroethene	ND		10.0	9.61		ug/L		96	65 - 136
1,2,4-Trichlorobenzene	ND		10.0	9.98		ug/L		100	60 - 127
1,2-Dibromo-3-Chloropropane	ND		10.0	8.90		ug/L		89	37 - 133
1,2-Dichlorobenzene	1.9		10.0	12.1		ug/L		102	77 - 120
1,2-Dichloroethane	ND		10.0	9.80		ug/L		98	68 - 132
1,2-Dichloropropane	ND		10.0	9.64		ug/L		96	76 - 124
1,3-Dichlorobenzene	ND		10.0	10.1		ug/L		101	76 - 120
1,4-Dichlorobenzene	0.36	J	10.0	10.4		ug/L		100	77 - 120
2-Butanone (MEK)	0.69	J	10.0	12.1		ug/L		114	39 - 138

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-14 MS
Matrix: Water
Analysis Batch: 118218

Client Sample ID: SG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Hexanone	ND		10.0	11.5		ug/L		115	25 - 132
4-Methyl-2-pentanone (MIBK)	ND		10.0	10.1		ug/L		101	45 - 145
Acetone	7.2		10.0	17.1		ug/L		99	22 - 150
Benzene	0.17	J	10.0	9.92		ug/L		98	80 - 120
Bromoform	ND		10.0	8.15		ug/L		81	46 - 150
Bromomethane	ND		10.0	9.62		ug/L		96	33 - 150
Carbon disulfide	ND		10.0	8.73		ug/L		87	54 - 132
Carbon tetrachloride	ND		10.0	9.12		ug/L		91	55 - 150
Chlorobenzene	1.1		10.0	11.2		ug/L		102	80 - 120
Chlorodibromomethane	ND		10.0	8.78		ug/L		88	60 - 140
Chloroethane	ND		10.0	9.12		ug/L		91	36 - 142
Chloroform	ND		10.0	9.73		ug/L		97	72 - 127
Chloromethane	ND		10.0	8.99		ug/L		90	50 - 139
cis-1,2-Dichloroethene	ND		10.0	9.53		ug/L		95	70 - 120
cis-1,3-Dichloropropene	ND		10.0	8.78		ug/L		88	66 - 120
Cyclohexane	ND		10.0	9.20		ug/L		92	45 - 142
Dichlorobromomethane	ND		10.0	8.84		ug/L		88	66 - 130
Dichlorodifluoromethane	ND		10.0	9.64		ug/L		96	13 - 150
Ethylbenzene	ND		10.0	10.1		ug/L		101	72 - 126
1,2-Dibromoethane	ND		10.0	10.1		ug/L		101	74 - 123
Isopropylbenzene	ND		10.0	10.5		ug/L		105	58 - 130
Methyl tert-butyl ether	ND		10.0	10.1		ug/L		101	64 - 123
Methylcyclohexane	ND		10.0	9.31		ug/L		93	45 - 145
Methylene Chloride	ND		10.0	9.25		ug/L		93	63 - 129
Styrene	ND		10.0	9.99		ug/L		100	71 - 127
Tetrachloroethene	ND		10.0	10.0		ug/L		100	70 - 135
Toluene	ND		10.0	10.4		ug/L		104	80 - 123
trans-1,2-Dichloroethene	ND		10.0	9.96		ug/L		100	73 - 126
trans-1,3-Dichloropropene	ND		10.0	9.69		ug/L		97	65 - 125
Trichloroethene	ND		10.0	9.57		ug/L		96	73 - 120
Trichlorofluoromethane	ND		10.0	8.28		ug/L		83	44 - 150
Vinyl chloride	ND		10.0	8.70		ug/L		87	53 - 138

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*
4-Bromofluorobenzene (Surr)	*98*		*70 - 118*
Dibromofluoromethane (Surr)	*102*		*70 - 128*
Toluene-d8 (Surr)	*103*		*71 - 118*

Lab Sample ID: 180-36441-14 MSD
Matrix: Water
Analysis Batch: 118218

Client Sample ID: SG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		10.0	8.58		ug/L		86	63 - 133	6	35
1,1,2,2-Tetrachloroethane	ND		10.0	10.1		ug/L		101	62 - 125	9	35
1,1,2-Trichloro-1,2,2-trifluoroetha ne	ND		10.0	9.58		ug/L		96	46 - 148	1	35

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-14 MSD
Matrix: Water
Analysis Batch: 118218

Client Sample ID: SG-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	ND		10.0	9.33		ug/L		93	77 - 127	7	35
1,1-Dichloroethane	ND		10.0	9.54		ug/L		95	73 - 126	4	35
1,1-Dichloroethene	ND		10.0	9.22		ug/L		92	65 - 136	4	35
1,2,4-Trichlorobenzene	ND		10.0	9.61		ug/L		96	60 - 127	4	35
1,2-Dibromo-3-Chloropropane	ND		10.0	8.51		ug/L		85	37 - 133	5	35
1,2-Dichlorobenzene	1.9		10.0	11.5		ug/L		96	77 - 120	6	24
1,2-Dichloroethane	ND		10.0	9.62		ug/L		96	68 - 132	2	32
1,2-Dichloropropane	ND		10.0	9.33		ug/L		93	76 - 124	3	34
1,3-Dichlorobenzene	ND		10.0	9.77		ug/L		98	76 - 120	3	24
1,4-Dichlorobenzene	0.36	J	10.0	9.90		ug/L		95	77 - 120	5	24
2-Butanone (MEK)	0.69	J	10.0	11.9		ug/L		112	39 - 138	1	35
2-Hexanone	ND		10.0	10.9		ug/L		109	25 - 132	5	35
4-Methyl-2-pentanone (MIBK)	ND		10.0	9.77		ug/L		98	45 - 145	3	35
Acetone	7.2		10.0	17.0		ug/L		99	22 - 150	0	35
Benzene	0.17	J	10.0	9.65		ug/L		95	80 - 120	3	32
Bromoform	ND		10.0	7.59		ug/L		76	46 - 150	7	35
Bromomethane	ND		10.0	8.72		ug/L		87	33 - 150	10	35
Carbon disulfide	ND		10.0	8.55		ug/L		85	54 - 132	2	35
Carbon tetrachloride	ND		10.0	8.77		ug/L		88	55 - 150	4	35
Chlorobenzene	1.1		10.0	10.6		ug/L		95	80 - 120	6	29
Chlorodibromomethane	ND		10.0	8.66		ug/L		87	60 - 140	1	35
Chloroethane	ND		10.0	9.62		ug/L		96	36 - 142	5	35
Chloroform	ND		10.0	9.54		ug/L		95	72 - 127	2	35
Chloromethane	ND		10.0	8.45		ug/L		84	50 - 139	6	35
cis-1,2-Dichloroethene	ND		10.0	9.34		ug/L		93	70 - 120	2	35
cis-1,3-Dichloropropene	ND		10.0	8.36		ug/L		84	66 - 120	5	35
Cyclohexane	ND		10.0	9.22		ug/L		92	45 - 142	0	35
Dichlorobromomethane	ND		10.0	8.59		ug/L		86	66 - 130	3	35
Dichlorodifluoromethane	ND		10.0	9.90		ug/L		99	13 - 150	3	35
Ethylbenzene	ND		10.0	9.76		ug/L		98	72 - 126	4	33
1,2-Dibromoethane	ND		10.0	9.67		ug/L		97	74 - 123	4	35
Isopropylbenzene	ND		10.0	9.89		ug/L		99	58 - 130	6	35
Methyl tert-butyl ether	ND		10.0	9.84		ug/L		98	64 - 123	3	35
Methylcyclohexane	ND		10.0	9.26		ug/L		93	45 - 145	1	35
Methylene Chloride	ND		10.0	9.21		ug/L		92	63 - 129	0	35
Styrene	ND		10.0	9.32		ug/L		93	71 - 127	7	34
Tetrachloroethene	ND		10.0	9.53		ug/L		95	70 - 135	5	35
Toluene	ND		10.0	9.56		ug/L		96	80 - 123	8	35
trans-1,2-Dichloroethene	ND		10.0	9.89		ug/L		99	73 - 126	1	35
trans-1,3-Dichloropropene	ND		10.0	9.33		ug/L		93	65 - 125	4	35
Trichloroethene	ND		10.0	9.26		ug/L		93	73 - 120	3	35
Trichlorofluoromethane	ND		10.0	8.91		ug/L		89	44 - 150	7	35
Vinyl chloride	ND		10.0	8.89		ug/L		89	53 - 138	2	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*
4-Bromofluorobenzene (Surr)	*98*		*70 - 118*
Dibromofluoromethane (Surr)	*94*		*70 - 128*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-36441-14 MSD
Matrix: Water
Analysis Batch: 118218

Client Sample ID: SG-3
Prep Type: Total/NA

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*71 - 118*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 180-118382/6
Matrix: Water
Analysis Batch: 118382

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			09/17/14 13:48	1

Lab Sample ID: LCS 180-118382/5
Matrix: Water
Analysis Batch: 118382

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	50.8		mg/L		102	90 - 110

Lab Sample ID: 180-36441-7 MS
Matrix: Water
Analysis Batch: 118382

Client Sample ID: SG-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	99		125	235		mg/L		109	80 - 120

Lab Sample ID: 180-36441-7 MSD
Matrix: Water
Analysis Batch: 118382

Client Sample ID: SG-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	99		125	237		mg/L		110	80 - 120	1	20

Lab Sample ID: 180-36441-13 MS
Matrix: Water
Analysis Batch: 118382

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	92		125	230		mg/L		110	80 - 120

Lab Sample ID: 180-36441-13 MSD
Matrix: Water
Analysis Batch: 118382

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	92		125	223		mg/L		105	80 - 120	3	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LB3 180-118001/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 117995

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		10	2.1	mg/Kg			09/14/14 16:16	1

Lab Sample ID: LCS 180-118001/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 117995

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	100	103		mg/Kg		103	90 - 110
Fluoride	25.0	25.5		mg/Kg		102	90 - 110
Sulfate	500	520		mg/Kg		104	90 - 110

Lab Sample ID: 180-36441-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 117995

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		73.8	72.0		mg/Kg	☼	98	80 - 120
Fluoride	0.52		18.4	17.3		mg/Kg	☼	91	80 - 120

Lab Sample ID: 180-36441-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 117995

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		73.1	69.0		mg/Kg	☼	94	80 - 120	4	20
Fluoride	0.52		18.3	16.5		mg/Kg	☼	87	80 - 120	5	20

Lab Sample ID: LB3 180-118001/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118382

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		10	2.1	mg/Kg			09/17/14 14:03	1

Lab Sample ID: LCS 180-118001/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118382

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	500	543		mg/Kg		109	90 - 110
Sulfate	500	525		mg/Kg		105	90 - 110

Lab Sample ID: 180-36441-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 118382

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	27		369	414		mg/Kg	☼	105	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 180-36441-4 MS
Matrix: Solid
Analysis Batch: 118382

Client Sample ID: SED-102
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2500		369	2260	4	mg/Kg	☼	-55	80 - 120

Lab Sample ID: 180-36441-4 MSD
Matrix: Solid
Analysis Batch: 118382

Client Sample ID: SED-102
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	27		366	406		mg/Kg	☼	104	80 - 120	2	20

Lab Sample ID: 180-36441-4 MSD
Matrix: Solid
Analysis Batch: 118382

Client Sample ID: SED-102
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2500		366	3050	4 F2	mg/Kg	☼	158	80 - 120	29	20

Method: 8315A - Carbonyl Compounds (HPLC)

Lab Sample ID: MB 640-111453/1-A
Matrix: Water
Analysis Batch: 111485

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 111453

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/07/14 12:10	09/09/14 12:44	1

Lab Sample ID: LCS 640-111453/2-A
Matrix: Water
Analysis Batch: 111485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 111453

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Formaldehyde	150	127		ug/L		85	73 - 133

Lab Sample ID: LCSD 640-111453/3-A
Matrix: Water
Analysis Batch: 111485

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 111453

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	150	146		ug/L		98	73 - 133	14	20

Lab Sample ID: 180-36441-13 MS
Matrix: Water
Analysis Batch: 111485

Client Sample ID: SG-4
Prep Type: Total/NA
Prep Batch: 111453

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Formaldehyde	9.7	J	150	131		ug/L		81	40 - 142

Method: 8315A - Carbonyl Compounds (HPLC) (Continued)

Lab Sample ID: 180-36441-13 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 111485 — **Prep Batch: 111453**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	9.7	J	150	132		ug/L		81	40 - 142	0	26

Method: In-House - Sulfonic Acids by LCMS/MS

Lab Sample ID: MB 200-76937/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77002 — **Prep Batch: 76937**

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		19	19	ug/Kg		09/08/14 13:30	09/10/14 07:35	1
p-Phenolsulfonic acid	ND		19	19	ug/Kg		09/08/14 13:30	09/10/14 07:35	1
Benzenesulfonic acid	ND		19	19	ug/Kg		09/08/14 13:30	09/10/14 07:35	1
Resorcinol	ND		19	19	ug/Kg		09/08/14 13:30	09/10/14 07:35	1
2,3',4-Trihydroxydiphenyl	ND		57	57	ug/Kg		09/08/14 13:30	09/10/14 07:35	1

Lab Sample ID: LCS 200-76937/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77002 — **Prep Batch: 76937**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	97.6	95.9		ug/Kg		98	60 - 140
p-Phenolsulfonic acid	97.6	93.5		ug/Kg		96	60 - 140
Benzenesulfonic acid	97.6	65.0		ug/Kg		67	60 - 140
Resorcinol	97.6	77.9		ug/Kg		80	60 - 140
2,3',4-Trihydroxydiphenyl	97.5	64.9		ug/Kg		67	10 - 110

Lab Sample ID: LLCS 200-76937/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77002 — **Prep Batch: 76937**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	19.9	20.2		ug/Kg		101	60 - 140
p-Phenolsulfonic acid	19.9	ND		ug/Kg		86	60 - 140
Benzenesulfonic acid	19.9	ND	*	ug/Kg		34	60 - 140
Resorcinol	19.9	ND		ug/Kg		81	60 - 140
2,3',4-Trihydroxydiphenyl	19.9	ND		ug/Kg		60	10 - 110

Lab Sample ID: 180-36441-2 MS — **Client Sample ID: SED-103**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	340		98.7	394	F1	ug/Kg		53	60 - 140
p-Phenolsulfonic acid	ND		98.6	63.1		ug/Kg		64	60 - 140
Benzenesulfonic acid	ND	*	98.6	35.3	F1	ug/Kg		36	60 - 140
Resorcinol	ND		98.6	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND		98.6	ND	F1	ug/Kg		0	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77002 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	5000		99.2	5540	4	ug/Kg		590	60 - 140

Lab Sample ID: 180-36441-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	ND		99.2	20.5	F1	ug/Kg		21	60 - 140
Benzenesulfonic acid	33	*	99.2	53.3	F1	ug/Kg		20	60 - 140
Resorcinol	ND		99.2	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND		99.2	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-36441-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77002 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m-Benzenedisulfonic acid	5000		98.8	4410	4	ug/Kg		-544	60 - 140	23	50

Lab Sample ID: 180-36441-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
p-Phenolsulfonic acid	ND		98.7	25.6	F1	ug/Kg		26	60 - 140	22	50
Benzenesulfonic acid	33	*	98.7	34.0	F1	ug/Kg		0.5	60 - 140	44	50
Resorcinol	ND		98.7	ND	F1	ug/Kg		0	60 - 140	NC	50
2,3',4-Trihydroxydiphenyl	ND		98.7	ND	F1	ug/Kg		0	10 - 110	NC	50

Lab Sample ID: 180-36441-6 MS — **Client Sample ID: SED-101**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	140		97.7	111	F1	ug/Kg		-25	60 - 140
p-Phenolsulfonic acid	ND		97.7	ND	F1	ug/Kg		0	60 - 140
Benzenesulfonic acid	ND	*	97.7	26.7	F1	ug/Kg		27	60 - 140
Resorcinol	ND		97.7	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND		97.6	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-36441-12 MS — **Client Sample ID: DUP090414**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76937**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	160		100	124	F1	ug/Kg		-37	60 - 140
p-Phenolsulfonic acid	ND		100	ND	F1	ug/Kg		0	60 - 140
Benzenesulfonic acid	ND	*	100	26.2	F1	ug/Kg		26	60 - 140
Resorcinol	ND		100	ND	F1	ug/Kg		0	60 - 140

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-12 MS
Matrix: Solid
Analysis Batch: 77003

Client Sample ID: DUP090414
Prep Type: Total/NA
Prep Batch: 76937

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3',4-Trihydroxydiphenyl	ND		100	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-36441-4 DU
Matrix: Solid
Analysis Batch: 77002

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 76937

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
m-Benzenedisulfonic acid	5000		4240		ug/Kg		16	50

Lab Sample ID: 180-36441-4 DU
Matrix: Solid
Analysis Batch: 77003

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 76937

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
p-Phenolsulfonic acid	ND		ND		ug/Kg		NC	50
Benzenesulfonic acid	33	*	ND		ug/Kg		NC	50
Resorcinol	ND		ND		ug/Kg		NC	50
2,3',4-Trihydroxydiphenyl	ND		ND		ug/Kg		NC	50

Lab Sample ID: MB 200-76950/1-A
Matrix: Water
Analysis Batch: 77000

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 76950

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 14:38	5
p-Phenolsulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 14:38	5
Benzenesulfonic acid	ND		50	50	ug/L		09/08/14 12:45	09/09/14 14:38	5
Resorcinol	ND		50	50	ug/L		09/08/14 12:45	09/09/14 14:38	5
2,3',4-Trihydroxydiphenyl	ND		50	50	ug/L		09/08/14 12:45	09/09/14 14:38	5

Lab Sample ID: LCS 200-76950/3-A
Matrix: Water
Analysis Batch: 77000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76950

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	250	234		ug/L		94	60 - 140
p-Phenolsulfonic acid	250	219		ug/L		88	60 - 140
Benzenesulfonic acid	250	251		ug/L		100	60 - 140
Resorcinol	250	258		ug/L		103	60 - 140
2,3',4-Trihydroxydiphenyl	250	260		ug/L		104	10 - 110

Lab Sample ID: LLCS 200-76950/2-A
Matrix: Water
Analysis Batch: 77000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 76950

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	50.0	ND		ug/L		85	60 - 140
p-Phenolsulfonic acid	50.0	ND		ug/L		97	60 - 140
Benzenesulfonic acid	50.0	ND		ug/L		86	60 - 140

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: LLCS 200-76950/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Resorcinol	50.0	ND		ug/L		84	60 - 140
2,3',4-Trihydroxydiphenyl	50.0	ND		ug/L		83	10 - 110

Lab Sample ID: 180-36441-1 MS — **Client Sample ID: SW-5 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1300		500	1820		ug/L		111	60 - 140

Lab Sample ID: 180-36441-1 MS — **Client Sample ID: SW-5 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	ND		250	324		ug/L		130	60 - 140
Benzenesulfonic acid	ND		250	198		ug/L		79	60 - 140
Resorcinol	ND		250	142	F1	ug/L		57	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	328	F1	ug/L		131	10 - 110

Lab Sample ID: 180-36441-3 MS — **Client Sample ID: SW-4 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1300		500	2010	E F1	ug/L		144	60 - 140

Lab Sample ID: 180-36441-3 MS — **Client Sample ID: SW-4 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	ND		250	274		ug/L		109	60 - 140
Benzenesulfonic acid	ND		250	168		ug/L		67	60 - 140
Resorcinol	ND		250	153		ug/L		61	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	334	F1	ug/L		134	10 - 110

Lab Sample ID: 180-36441-5 MS — **Client Sample ID: SW-3 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1700		750	2540		ug/L		106	60 - 140

Lab Sample ID: 180-36441-5 MS — **Client Sample ID: SW-3 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	70		250	315		ug/L		98	60 - 140

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-5 MS — **Client Sample ID: SW-3 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzenesulfonic acid	ND		250	176		ug/L		70	60 - 140
Resorcinol	ND		250	171		ug/L		68	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	324	F1	ug/L		130	10 - 110

Lab Sample ID: 180-36441-7 MS — **Client Sample ID: SG-7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1900		750	2650		ug/L		104	60 - 140

Lab Sample ID: 180-36441-7 MS — **Client Sample ID: SG-7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	120		250	379		ug/L		105	60 - 140
Benzenesulfonic acid	ND		250	177		ug/L		71	60 - 140
Resorcinol	ND		250	173		ug/L		69	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	333	F1	ug/L		133	10 - 110

Lab Sample ID: 180-36441-8 MS — **Client Sample ID: SG-5**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	2400		1000	3630		ug/L		119	60 - 140

Lab Sample ID: 180-36441-8 MS — **Client Sample ID: SG-5**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	120		250	361		ug/L		96	60 - 140
Benzenesulfonic acid	ND		250	190		ug/L		76	60 - 140
Resorcinol	ND		250	185		ug/L		74	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	346	F1	ug/L		139	10 - 110

Lab Sample ID: 180-36441-9 MS — **Client Sample ID: SG-6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	130		250	386		ug/L		103	60 - 140
p-Phenolsulfonic acid	ND		250	235		ug/L		94	60 - 140
Benzenesulfonic acid	ND		250	145	F1	ug/L		58	60 - 140
Resorcinol	ND		250	178		ug/L		71	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	326	F1	ug/L		130	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-10 MS — **Client Sample ID: SW-2 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	130		250	397		ug/L		107	60 - 140
p-Phenolsulfonic acid	ND		250	208		ug/L		83	60 - 140
Benzenesulfonic acid	ND		250	145	F1	ug/L		58	60 - 140
Resorcinol	ND		250	178		ug/L		71	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	307	F1	ug/L		123	10 - 110

Lab Sample ID: 180-36441-11 MS — **Client Sample ID: SW-1 LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77000 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	130		250	460		ug/L		130	60 - 140
p-Phenolsulfonic acid	ND		250	230		ug/L		92	60 - 140
Benzenesulfonic acid	ND		250	146	F1	ug/L		58	60 - 140
Resorcinol	ND		250	178		ug/L		71	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	308	F1	ug/L		123	10 - 110

Lab Sample ID: 180-36441-13 MS — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	3700		1250	5330	E	ug/L		130	60 - 140

Lab Sample ID: 180-36441-13 MS — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	150		250	388		ug/L		94	60 - 140
Benzenesulfonic acid	54		250	207		ug/L		61	60 - 140
Resorcinol	ND		250	172		ug/L		69	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	367	F1	ug/L		147	10 - 110

Lab Sample ID: 180-36441-13 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m-Benzenedisulfonic acid	3700		1250	5570	E F1	ug/L		150	60 - 140	4	50

Lab Sample ID: 180-36441-13 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
p-Phenolsulfonic acid	150		250	378		ug/L		89	60 - 140	3	50
Benzenesulfonic acid	54		250	213		ug/L		63	60 - 140	3	50
Resorcinol	ND		250	209		ug/L		84	60 - 140	20	50

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-13 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,3',4-Trihydroxydiphenyl	ND		250	361	F1	ug/L		145	10 - 110	2	50

Lab Sample ID: 180-36441-14 MS — **Client Sample ID: SG-3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	3100		1000	4480	E	ug/L		136	60 - 140

Lab Sample ID: 180-36441-14 MS — **Client Sample ID: SG-3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	180		250	415		ug/L		93	60 - 140
Benzenesulfonic acid	ND		250	196		ug/L		78	60 - 140
Resorcinol	ND		250	219		ug/L		88	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	353	F1	ug/L		141	10 - 110

Lab Sample ID: 180-36441-15 MS — **Client Sample ID: SG-8**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1000		500	1510		ug/L		94	60 - 140

Lab Sample ID: 180-36441-15 MS — **Client Sample ID: SG-8**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	550		250	773		ug/L		89	60 - 140
Benzenesulfonic acid	ND		250	159		ug/L		64	60 - 140
Resorcinol	300		250	520		ug/L		87	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	384	F1	ug/L		153	10 - 110

Lab Sample ID: 180-36441-16 MS — **Client Sample ID: SW-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	100		250	407		ug/L		122	60 - 140
p-Phenolsulfonic acid	ND		250	229		ug/L		92	60 - 140
Benzenesulfonic acid	ND		250	142	F1	ug/L		57	60 - 140
Resorcinol	ND		250	179		ug/L		72	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	340	F1	ug/L		136	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-17 MS — **Client Sample ID: SG-2**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	110		250	393		ug/L		113	60 - 140
p-Phenolsulfonic acid	ND		250	225		ug/L		90	60 - 140
Benzenesulfonic acid	ND		250	140	F1	ug/L		56	60 - 140
Resorcinol	ND		250	199		ug/L		80	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	340	F1	ug/L		136	10 - 110

Lab Sample ID: 180-36441-18 MS — **Client Sample ID: SH-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	110		250	417		ug/L		123	60 - 140
p-Phenolsulfonic acid	ND		250	244		ug/L		98	60 - 140
Benzenesulfonic acid	ND		250	147	F1	ug/L		59	60 - 140
Resorcinol	ND		250	199		ug/L		79	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	324	F1	ug/L		130	10 - 110

Lab Sample ID: 180-36441-19 MS — **Client Sample ID: SG-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77192 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	120		250	472		ug/L		139	60 - 140
p-Phenolsulfonic acid	ND		250	297		ug/L		119	60 - 140
Benzenesulfonic acid	ND		250	173		ug/L		69	60 - 140
Resorcinol	ND		250	192		ug/L		77	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	330	F1	ug/L		132	10 - 110

Lab Sample ID: 180-36441-20 MS — **Client Sample ID: EB090514**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77192 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	ND		250	334		ug/L		134	60 - 140
p-Phenolsulfonic acid	ND		250	296		ug/L		118	60 - 140
Benzenesulfonic acid	ND		250	251		ug/L		100	60 - 140
Resorcinol	ND		250	251		ug/L		100	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	246		ug/L		98	10 - 110

Lab Sample ID: 180-36441-21 MS — **Client Sample ID: DUP090514**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	3200		1250	4440		ug/L		102	60 - 140

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-36441-21 MS — **Client Sample ID: DUP090514**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77192 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
p-Phenolsulfonic acid	240		250	551		ug/L		122	60 - 140
Benzenesulfonic acid	51		250	245		ug/L		78	60 - 140
Resorcinol	ND		250	233		ug/L		93	60 - 140
2,3',4-Trihydroxydiphenyl	ND		250	352	F1	ug/L		141	10 - 110

Lab Sample ID: 180-36441-13 DU — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77003 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
m-Benzenedisulfonic acid	3700		4040		ug/L		9	50

Lab Sample ID: 180-36441-13 DU — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 77108 — **Prep Batch: 76950**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
p-Phenolsulfonic acid	150		144		ug/L		6	50
Benzenesulfonic acid	54		51.6		ug/L		4	50
Resorcinol	ND		ND		ug/L		NC	50
2,3',4-Trihydroxydiphenyl	ND		ND		ug/L		NC	50

GC/MS VOA

Analysis Batch: 117276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Total/NA	Solid	8260B	117277
180-36441-4	SED-102	Total/NA	Solid	8260B	117277
180-36441-4 MS	SED-102	Total/NA	Solid	8260B	117277
180-36441-4 MSD	SED-102	Total/NA	Solid	8260B	117277
180-36441-6	SED-101	Total/NA	Solid	8260B	117277
180-36441-12	DUP090414	Total/NA	Solid	8260B	117277
LCS 180-117277/2-A	Lab Control Sample	Total/NA	Solid	8260B	117277
MB 180-117277/1-A	Method Blank	Total/NA	Solid	8260B	117277

Prep Batch: 117277

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Total/NA	Solid	5030B	
180-36441-4	SED-102	Total/NA	Solid	5030B	
180-36441-4 MS	SED-102	Total/NA	Solid	5030B	
180-36441-4 MSD	SED-102	Total/NA	Solid	5030B	
180-36441-6	SED-101	Total/NA	Solid	5030B	
180-36441-12	DUP090414	Total/NA	Solid	5030B	
LCS 180-117277/2-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 180-117277/1-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 117991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-1	SW-5 LANGAN	Total/NA	Water	8260C	
180-36441-3	SW-4 LANGAN	Total/NA	Water	8260C	
180-36441-9	SG-6	Total/NA	Water	8260C	
LCS 180-117991/7	Lab Control Sample	Total/NA	Water	8260C	
MB 180-117991/6	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 118072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-5	SW-3 LANGAN	Total/NA	Water	8260C	
180-36441-7	SG-7	Total/NA	Water	8260C	
180-36441-8	SG-5	Total/NA	Water	8260C	
180-36441-10	SW-2 LANGAN	Total/NA	Water	8260C	
180-36441-11	SW-1 LANGAN	Total/NA	Water	8260C	
180-36441-13	SG-4	Total/NA	Water	8260C	
180-36441-13 MS	SG-4	Total/NA	Water	8260C	
180-36441-13 MSD	SG-4	Total/NA	Water	8260C	
180-36441-16	SW-1	Total/NA	Water	8260C	
180-36441-17	SG-2	Total/NA	Water	8260C	
180-36441-18	SH-1	Total/NA	Water	8260C	
180-36441-19	SG-1	Total/NA	Water	8260C	
180-36441-20	EB090514	Total/NA	Water	8260C	
180-36441-22	TRIP BLANKS	Total/NA	Water	8260C	
LCS 180-118072/8	Lab Control Sample	Total/NA	Water	8260C	
MB 180-118072/5	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 118218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-14	SG-3	Total/NA	Water	8260C	
180-36441-14 MS	SG-3	Total/NA	Water	8260C	

GC/MS VOA (Continued)

Analysis Batch: 118218 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-14 MSD	SG-3	Total/NA	Water	8260C	
180-36441-15	SG-8	Total/NA	Water	8260C	
180-36441-21	DUP090514	Total/NA	Water	8260C	
LCS 180-118218/9	Lab Control Sample	Total/NA	Water	8260C	
MB 180-118218/6	Method Blank	Total/NA	Water	8260C	

HPLC/IC

Prep Batch: 111453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-13	SG-4	Total/NA	Water	8315_W_Prep	
180-36441-13 MS	SG-4	Total/NA	Water	8315_W_Prep	
180-36441-13 MSD	SG-4	Total/NA	Water	8315_W_Prep	
180-36441-14	SG-3	Total/NA	Water	8315_W_Prep	
180-36441-15	SG-8	Total/NA	Water	8315_W_Prep	
180-36441-16	SW-1	Total/NA	Water	8315_W_Prep	
180-36441-17	SG-2	Total/NA	Water	8315_W_Prep	
180-36441-18	SH-1	Total/NA	Water	8315_W_Prep	
180-36441-19	SG-1	Total/NA	Water	8315_W_Prep	
180-36441-20	EB090514	Total/NA	Water	8315_W_Prep	
180-36441-21	DUP090514	Total/NA	Water	8315_W_Prep	
LCS 640-111453/2-A	Lab Control Sample	Total/NA	Water	8315_W_Prep	
LCSD 640-111453/3-A	Lab Control Sample Dup	Total/NA	Water	8315_W_Prep	
MB 640-111453/1-A	Method Blank	Total/NA	Water	8315_W_Prep	

Analysis Batch: 111485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-13	SG-4	Total/NA	Water	8315A	111453
180-36441-13 MS	SG-4	Total/NA	Water	8315A	111453
180-36441-13 MSD	SG-4	Total/NA	Water	8315A	111453
180-36441-14	SG-3	Total/NA	Water	8315A	111453
180-36441-15	SG-8	Total/NA	Water	8315A	111453
180-36441-16	SW-1	Total/NA	Water	8315A	111453
180-36441-17	SG-2	Total/NA	Water	8315A	111453
180-36441-18	SH-1	Total/NA	Water	8315A	111453
180-36441-19	SG-1	Total/NA	Water	8315A	111453
180-36441-20	EB090514	Total/NA	Water	8315A	111453
180-36441-21	DUP090514	Total/NA	Water	8315A	111453
LCS 640-111453/2-A	Lab Control Sample	Total/NA	Water	8315A	111453
LCSD 640-111453/3-A	Lab Control Sample Dup	Total/NA	Water	8315A	111453
MB 640-111453/1-A	Method Blank	Total/NA	Water	8315A	111453

Analysis Batch: 117995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Soluble	Solid	300.0	118001
180-36441-4 MS	SED-102	Soluble	Solid	300.0	118001
180-36441-4 MSD	SED-102	Soluble	Solid	300.0	118001
180-36441-6	SED-101	Soluble	Solid	300.0	118001
180-36441-12	DUP090414	Soluble	Solid	300.0	118001
LB3 180-118001/1-A	Method Blank	Soluble	Solid	300.0	118001

HPLC/IC (Continued)

Analysis Batch: 117995 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 180-118001/2-A	Lab Control Sample	Soluble	Solid	300.0	118001

Leach Batch: 118001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Soluble	Solid	DI Leach	
180-36441-4	SED-102	Soluble	Solid	DI Leach	
180-36441-4 MS	SED-102	Soluble	Solid	DI Leach	
180-36441-4 MSD	SED-102	Soluble	Solid	DI Leach	
180-36441-6	SED-101	Soluble	Solid	DI Leach	
180-36441-12	DUP090414	Soluble	Solid	DI Leach	
LB3 180-118001/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 180-118001/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

Analysis Batch: 118382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-1	SW-5 LANGAN	Total/NA	Water	300.0	
180-36441-3	SW-4 LANGAN	Total/NA	Water	300.0	
180-36441-4	SED-102	Soluble	Solid	300.0	118001
180-36441-4 MS	SED-102	Soluble	Solid	300.0	118001
180-36441-4 MS	SED-102	Soluble	Solid	300.0	118001
180-36441-4 MSD	SED-102	Soluble	Solid	300.0	118001
180-36441-4 MSD	SED-102	Soluble	Solid	300.0	118001
180-36441-5	SW-3 LANGAN	Total/NA	Water	300.0	
180-36441-7	SG-7	Total/NA	Water	300.0	
180-36441-7 MS	SG-7	Total/NA	Water	300.0	
180-36441-7 MSD	SG-7	Total/NA	Water	300.0	
180-36441-8	SG-5	Total/NA	Water	300.0	
180-36441-9	SG-6	Total/NA	Water	300.0	
180-36441-10	SW-2 LANGAN	Total/NA	Water	300.0	
180-36441-11	SW-1 LANGAN	Total/NA	Water	300.0	
180-36441-13	SG-4	Total/NA	Water	300.0	
180-36441-13 MS	SG-4	Total/NA	Water	300.0	
180-36441-13 MSD	SG-4	Total/NA	Water	300.0	
180-36441-14	SG-3	Total/NA	Water	300.0	
180-36441-15	SG-8	Total/NA	Water	300.0	
180-36441-16	SW-1	Total/NA	Water	300.0	
180-36441-17	SG-2	Total/NA	Water	300.0	
180-36441-18	SH-1	Total/NA	Water	300.0	
180-36441-19	SG-1	Total/NA	Water	300.0	
180-36441-20	EB090514	Total/NA	Water	300.0	
180-36441-21	DUP090514	Total/NA	Water	300.0	
LB3 180-118001/1-A	Method Blank	Soluble	Solid	300.0	118001
LCS 180-118001/2-A	Lab Control Sample	Soluble	Solid	300.0	118001
LCS 180-118382/5	Lab Control Sample	Total/NA	Water	300.0	
MB 180-118382/6	Method Blank	Total/NA	Water	300.0	

LCMS

Prep Batch: 76937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Total/NA	Solid	In House	
180-36441-2 MS	SED-103	Total/NA	Solid	In House	
180-36441-4	SED-102	Total/NA	Solid	In House	
180-36441-4 DU	SED-102	Total/NA	Solid	In House	
180-36441-4 MS	SED-102	Total/NA	Solid	In House	
180-36441-4 MSD	SED-102	Total/NA	Solid	In House	
180-36441-6	SED-101	Total/NA	Solid	In House	
180-36441-6 MS	SED-101	Total/NA	Solid	In House	
180-36441-12	DUP090414	Total/NA	Solid	In House	
180-36441-12 MS	DUP090414	Total/NA	Solid	In House	
LCS 200-76937/3-A	Lab Control Sample	Total/NA	Solid	In House	
LLCS 200-76937/2-A	Lab Control Sample	Total/NA	Solid	In House	
MB 200-76937/1-A	Method Blank	Total/NA	Solid	In House	

Prep Batch: 76950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-1	SW-5 LANGAN	Total/NA	Water	In House	
180-36441-1 MS	SW-5 LANGAN	Total/NA	Water	In House	
180-36441-3	SW-4 LANGAN	Total/NA	Water	In House	
180-36441-3 MS	SW-4 LANGAN	Total/NA	Water	In House	
180-36441-5	SW-3 LANGAN	Total/NA	Water	In House	
180-36441-5 MS	SW-3 LANGAN	Total/NA	Water	In House	
180-36441-7	SG-7	Total/NA	Water	In House	
180-36441-7 MS	SG-7	Total/NA	Water	In House	
180-36441-8	SG-5	Total/NA	Water	In House	
180-36441-8 MS	SG-5	Total/NA	Water	In House	
180-36441-9	SG-6	Total/NA	Water	In House	
180-36441-9 MS	SG-6	Total/NA	Water	In House	
180-36441-10	SW-2 LANGAN	Total/NA	Water	In House	
180-36441-10 MS	SW-2 LANGAN	Total/NA	Water	In House	
180-36441-11	SW-1 LANGAN	Total/NA	Water	In House	
180-36441-11 MS	SW-1 LANGAN	Total/NA	Water	In House	
180-36441-13	SG-4	Total/NA	Water	In House	
180-36441-13 DU	SG-4	Total/NA	Water	In House	
180-36441-13 MS	SG-4	Total/NA	Water	In House	
180-36441-13 MSD	SG-4	Total/NA	Water	In House	
180-36441-14	SG-3	Total/NA	Water	In House	
180-36441-14 MS	SG-3	Total/NA	Water	In House	
180-36441-15	SG-8	Total/NA	Water	In House	
180-36441-15 MS	SG-8	Total/NA	Water	In House	
180-36441-16	SW-1	Total/NA	Water	In House	
180-36441-16 MS	SW-1	Total/NA	Water	In House	
180-36441-17	SG-2	Total/NA	Water	In House	
180-36441-17 MS	SG-2	Total/NA	Water	In House	
180-36441-18	SH-1	Total/NA	Water	In House	
180-36441-18 MS	SH-1	Total/NA	Water	In House	
180-36441-19	SG-1	Total/NA	Water	In House	
180-36441-19 MS	SG-1	Total/NA	Water	In House	
180-36441-20	EB090514	Total/NA	Water	In House	
180-36441-20 MS	EB090514	Total/NA	Water	In House	
180-36441-21	DUP090514	Total/NA	Water	In House	

LCMS (Continued)

Prep Batch: 76950 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-21 MS	DUP090514	Total/NA	Water	In House	
LCS 200-76950/3-A	Lab Control Sample	Total/NA	Water	In House	
LLCS 200-76950/2-A	Lab Control Sample	Total/NA	Water	In House	
MB 200-76950/1-A	Method Blank	Total/NA	Water	In House	

Analysis Batch: 77000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-1	SW-5 LANGAN	Total/NA	Water	In-House	76950
180-36441-1	SW-5 LANGAN	Total/NA	Water	In-House	76950
180-36441-1 MS	SW-5 LANGAN	Total/NA	Water	In-House	76950
180-36441-1 MS	SW-5 LANGAN	Total/NA	Water	In-House	76950
180-36441-3	SW-4 LANGAN	Total/NA	Water	In-House	76950
180-36441-3	SW-4 LANGAN	Total/NA	Water	In-House	76950
180-36441-3 MS	SW-4 LANGAN	Total/NA	Water	In-House	76950
180-36441-3 MS	SW-4 LANGAN	Total/NA	Water	In-House	76950
180-36441-5	SW-3 LANGAN	Total/NA	Water	In-House	76950
180-36441-5	SW-3 LANGAN	Total/NA	Water	In-House	76950
180-36441-5 MS	SW-3 LANGAN	Total/NA	Water	In-House	76950
180-36441-5 MS	SW-3 LANGAN	Total/NA	Water	In-House	76950
180-36441-7	SG-7	Total/NA	Water	In-House	76950
180-36441-7	SG-7	Total/NA	Water	In-House	76950
180-36441-7 MS	SG-7	Total/NA	Water	In-House	76950
180-36441-7 MS	SG-7	Total/NA	Water	In-House	76950
180-36441-8	SG-5	Total/NA	Water	In-House	76950
180-36441-8	SG-5	Total/NA	Water	In-House	76950
180-36441-8 MS	SG-5	Total/NA	Water	In-House	76950
180-36441-8 MS	SG-5	Total/NA	Water	In-House	76950
180-36441-9	SG-6	Total/NA	Water	In-House	76950
180-36441-9 MS	SG-6	Total/NA	Water	In-House	76950
180-36441-10	SW-2 LANGAN	Total/NA	Water	In-House	76950
180-36441-10 MS	SW-2 LANGAN	Total/NA	Water	In-House	76950
180-36441-11	SW-1 LANGAN	Total/NA	Water	In-House	76950
180-36441-11 MS	SW-1 LANGAN	Total/NA	Water	In-House	76950
LCS 200-76950/3-A	Lab Control Sample	Total/NA	Water	In-House	76950
LLCS 200-76950/2-A	Lab Control Sample	Total/NA	Water	In-House	76950
MB 200-76950/1-A	Method Blank	Total/NA	Water	In-House	76950

Analysis Batch: 77002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-4	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 DU	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 MS	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 MSD	SED-102	Total/NA	Solid	In-House	76937
LCS 200-76937/3-A	Lab Control Sample	Total/NA	Solid	In-House	76937
LLCS 200-76937/2-A	Lab Control Sample	Total/NA	Solid	In-House	76937
MB 200-76937/1-A	Method Blank	Total/NA	Solid	In-House	76937

Analysis Batch: 77003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Total/NA	Solid	In-House	76937
180-36441-2 MS	SED-103	Total/NA	Solid	In-House	76937

LCMS (Continued)

Analysis Batch: 77003 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-4	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 DU	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 MS	SED-102	Total/NA	Solid	In-House	76937
180-36441-4 MSD	SED-102	Total/NA	Solid	In-House	76937
180-36441-6	SED-101	Total/NA	Solid	In-House	76937
180-36441-6 MS	SED-101	Total/NA	Solid	In-House	76937
180-36441-12	DUP090414	Total/NA	Solid	In-House	76937
180-36441-12 MS	DUP090414	Total/NA	Solid	In-House	76937
180-36441-13	SG-4	Total/NA	Water	In-House	76950
180-36441-13 DU	SG-4	Total/NA	Water	In-House	76950
180-36441-13 MS	SG-4	Total/NA	Water	In-House	76950
180-36441-13 MSD	SG-4	Total/NA	Water	In-House	76950
180-36441-21	DUP090514	Total/NA	Water	In-House	76950
180-36441-21 MS	DUP090514	Total/NA	Water	In-House	76950

Analysis Batch: 77108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-13	SG-4	Total/NA	Water	In-House	76950
180-36441-13 DU	SG-4	Total/NA	Water	In-House	76950
180-36441-13 MS	SG-4	Total/NA	Water	In-House	76950
180-36441-13 MSD	SG-4	Total/NA	Water	In-House	76950
180-36441-14	SG-3	Total/NA	Water	In-House	76950
180-36441-14	SG-3	Total/NA	Water	In-House	76950
180-36441-14 MS	SG-3	Total/NA	Water	In-House	76950
180-36441-14 MS	SG-3	Total/NA	Water	In-House	76950
180-36441-15	SG-8	Total/NA	Water	In-House	76950
180-36441-15	SG-8	Total/NA	Water	In-House	76950
180-36441-15 MS	SG-8	Total/NA	Water	In-House	76950
180-36441-15 MS	SG-8	Total/NA	Water	In-House	76950
180-36441-16	SW-1	Total/NA	Water	In-House	76950
180-36441-16 MS	SW-1	Total/NA	Water	In-House	76950
180-36441-17	SG-2	Total/NA	Water	In-House	76950
180-36441-17 MS	SG-2	Total/NA	Water	In-House	76950
180-36441-18	SH-1	Total/NA	Water	In-House	76950
180-36441-18 MS	SH-1	Total/NA	Water	In-House	76950

Analysis Batch: 77192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-19	SG-1	Total/NA	Water	In-House	76950
180-36441-19 MS	SG-1	Total/NA	Water	In-House	76950
180-36441-20	EB090514	Total/NA	Water	In-House	76950
180-36441-20 MS	EB090514	Total/NA	Water	In-House	76950
180-36441-21	DUP090514	Total/NA	Water	In-House	76950
180-36441-21 MS	DUP090514	Total/NA	Water	In-House	76950

General Chemistry

Analysis Batch: 117578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-2	SED-103	Total/NA	Solid	2540G	

General Chemistry (Continued)

Analysis Batch: 117578 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36441-4	SED-102	Total/NA	Solid	2540G	
180-36441-6	SED-101	Total/NA	Solid	2540G	
180-36441-12	DUP090414	Total/NA	Solid	2540G	

TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

052735

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TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Joe Zaso	Date: 9.5.14	COC No: 1 of 2 COCs
Company Name: ARCADIS	Tel/Fax: 724-742-9180	Lab Contact: V. Bertot	Carrier: FedEX	Sampler: Joe Zaso
Address: 6041 Wallace Rd Ext	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			k-in Client:
Phone: 724-742-9180	TAT if different from Below ____			Sampling:
Fax: 724-742-9189	☑ 2 weeks			
Project Name: Indspec - Petrolia	☐ 1 week			/ SDG No.:
Site: Petrolia, PA	☐ 2 days			
PO #	☐ 1 day			

180-36441 Chain of Custody

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	8260 - VOC - Spec	Sulfate	Sample Specific Notes:
SW-5 Langan	9.4.14	1125	G	WT	4	N	N	X	X	
Sed-103		1220	C	SO	3	N	N	X	X	
SW-4 Langan		1235	G	WT	4	N	N	X	X	
Sed-102		1310	C	SO	9	N	Y	X	X	
SW-3 Langan		1320	G	WT	4	N	N	X	X	
Sed-101		1400	C	SO	3	N	N	X	X	
SG-7		1430	G	WT	4	N	N	X	X	
SG-5		1515	G	WT	4	N	N	X	X	
SG-6		1600	G	WT	4	N	N	X	X	
SW-2 Langan		1615	G	WT	4	N	N	X	X	
SW-1 Langan		1630	G	WT	4	N	N	X	X	
DUP090414	↓	—	C	SO	3	N	N	X	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____		Therm ID No.:_____
Relinquished by: Joseph Kozo	Company: ARCADIS	Date/Time: 9.5.14 1600	Received by: Don Muenwatana	Company: TAP	Date/Time: 9-6-14 9:15
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

052722

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Joe Zaso	Date: 9.5.14	COC No: 2 of 2 COCs
Company Name: ARCADIS	Tel/Fax: 724-742-9180	Lab Contact: V. Barfot	Carrier: Fed Ex	Sampler: Joe Zaso
Address: 6041 Wallace Rd Ext	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
Phone: 724-742-9180	TAT if different from Below			Lab Sampling:
Fax: 724-742-9189	☑ 2 weeks			
Project Name: Indspec - Petrolia	☐ 1 week			Job / SDG No.:
Site: Petrolia, PA	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260-Select VOCs	Sulfate	Sample Specific Notes:
SG-4	9.5.14	0955	G	WT	12	N	Y	X	X	
SG-3		1030	G	WT	4	N	N	X	X	
SG-8		1100	G	WT	4	N	N	X	X	
SW-1		1105	G	WT	4	N	N	X	X	
SG-2		1145	G	WT	4	N	N	X	X	
SH-1		1215	G	WT	4	N	N	X	X	
SG-1		1225	G	WT	4	N	N	X	X	
EB090514		1230	G	WT	4	N	N	X	X	
DUP090514		—	G	WT	4	N	N	X	X	
Trip Blanks		—	G	WT	~~2~~ 4	N	N	X		

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Joseph K Zaso	ARCADIS	9.5.14/1600	Debbie Watson	TAL	9-6-14 9:15
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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10/2014

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Login Number: 36441

List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Watson, Debbie

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-36402-1
Client Project/Site: INDSPEC, Petrolia PA

For:
ARCADIS U.S. Inc
6041 Wallace Road Extension
Suite 300
Wexford, Pennsylvania 15090

Attn: Chris Bonessi

Veronica Bortot

Authorized for release by:
10/9/2014 4:18:50 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 180-36402-1

Laboratory: TestAmerica Pittsburgh

Narrative

CASE NARRATIVE

Client: ARCADIS U.S. Inc

Project: INDSPEC, Petrolia PA

Report Number: 180-36402-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 09/05/2014; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 2.7 C.

FORMALDEHYDE

Samples Sed-103 (180-36402-2), Sed-102 (180-36402-4), Sed-101 (180-36402-6) and DUP 090414 (180-36402-12) were analyzed for formaldehyde in accordance with EPA SW-846 Method 8315A. The samples were prepared and analyzed on 09/10/2014.

Samples SW-5 Langan (180-36402-1), SW-4 Langan (180-36402-3), SW-3 Langan (180-36402-5), SG-7 (180-36402-7), SG-5 (180-36402-8), SG-6 (180-36402-9), SW-2 Langan (180-36402-10) and SW-1 Langan (180-36402-11) were analyzed for formaldehyde in accordance with EPA SW-846 Method 8315A. The samples were prepared on 09/05/2014 and analyzed on 09/08/2014 and 09/09/2014.

Reanalysis of the following samples was performed outside of the recommended three day 8315A analytical holding time due to a failing CCV in the original analytical run. : (180-36402-8), (180-36402-9), (180-36402-10), (180-36402-11), SG-5 (180-36402-8), SG-6 (180-36402-9), SW-1 Langan (180-36402-11), SW-2 Langan (180-36402-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS

Samples Sed-103 (180-36402-2), Sed-102 (180-36402-4), Sed-101 (180-36402-6) and DUP 090414 (180-36402-12) were analyzed for percent solids in accordance with EPA SW846 3550C. The samples were analyzed on 09/08/2014.

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Laboratory: TestAmerica Pittsburgh

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-15

Laboratory: TestAmerica Tallahassee

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E81005	06-30-15
Georgia	State Program	4		06-30-15
Louisiana	NELAP	6	30663	06-30-15
New Jersey	NELAP	2	FL012	06-30-15
Texas	NELAP	6	T104704459-11-2	03-31-15
USDA	Federal		P330-08-00158	08-05-14 *

* Certification renewal pending - certification considered valid.

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-36402-1	SW-5 Langan	Water	09/04/14 11:25	09/05/14 10:49
180-36402-2	Sed-103	Solid	09/04/14 12:20	09/05/14 10:49
180-36402-3	SW-4 Langan	Water	09/04/14 12:35	09/05/14 10:49
180-36402-4	Sed-102	Solid	09/04/14 13:10	09/05/14 10:49
180-36402-5	SW-3 Langan	Water	09/04/14 13:20	09/05/14 10:49
180-36402-6	Sed-101	Solid	09/04/14 14:00	09/05/14 10:49
180-36402-7	SG-7	Water	09/04/14 14:30	09/05/14 10:49
180-36402-8	SG-5	Water	09/04/14 15:15	09/05/14 10:49
180-36402-9	SG-6	Water	09/04/14 16:00	09/05/14 10:49
180-36402-10	SW-2 Langan	Water	09/04/14 16:15	09/05/14 10:49
180-36402-11	SW-1 Langan	Water	09/04/14 16:30	09/05/14 10:49
180-36402-12	DUP 090414	Solid	09/04/14 00:00	09/05/14 10:49

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Method	Method Description	Protocol	Laboratory
8315A	Carbonyl Compounds (HPLC)	SW846	TAL TAL
Moisture	Percent Moisture	EPA	TAL TAL

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Client Sample ID: SW-5 Langan

Lab Sample ID: 180-36402-1
Date Collected: 09/04/14 11:25
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111477	09/08/14 19:44	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: Sed-103

Lab Sample ID: 180-36402-2
Date Collected: 09/04/14 12:20
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 81.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_S_Prep			20.1 g	4.0 mL	111503	09/10/14 07:30	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.1 g	4.0 mL	111534	09/10/14 14:15	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Analysis	Moisture		1			111459	09/08/14 10:54	JPG	TAL TAL
	Instrument ID: AND EK610									

Client Sample ID: SW-4 Langan

Lab Sample ID: 180-36402-3
Date Collected: 09/04/14 12:35
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111477	09/08/14 19:56	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: Sed-102

Lab Sample ID: 180-36402-4
Date Collected: 09/04/14 13:10
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 75.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_S_Prep			20.1 g	4.0 mL	111503	09/10/14 07:30	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.1 g	4.0 mL	111534	09/10/14 14:27	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Analysis	Moisture		1			111459	09/08/14 10:54	JPG	TAL TAL
	Instrument ID: AND EK610									

Client Sample ID: SW-3 Langan

Lab Sample ID: 180-36402-5
Date Collected: 09/04/14 13:20
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111477	09/08/14 20:07	DNS	TAL TAL
	Instrument ID: CHLCJ									

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Client Sample ID: Sed-101

Lab Sample ID: 180-36402-6

Date Collected: 09/04/14 14:00
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 82.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_S_Prep			20.0 g	4.0 mL	111503	09/10/14 07:30	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.0 g	4.0 mL	111534	09/10/14 15:03	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Analysis	Moisture		1			111459	09/08/14 10:54	JPG	TAL TAL
	Instrument ID: AND EK610									

Client Sample ID: SG-7

Lab Sample ID: 180-36402-7

Date Collected: 09/04/14 14:30
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111477	09/08/14 20:19	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: SG-5

Lab Sample ID: 180-36402-8

Date Collected: 09/04/14 15:15
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 11:45	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: SG-6

Lab Sample ID: 180-36402-9

Date Collected: 09/04/14 16:00
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 11:57	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: SW-2 Langan

Lab Sample ID: 180-36402-10

Date Collected: 09/04/14 16:15
Matrix: Water
Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 12:09	DNS	TAL TAL
	Instrument ID: CHLCJ									

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Client Sample ID: SW-1 Langan

Lab Sample ID: 180-36402-11

Date Collected: 09/04/14 16:30

Matrix: Water

Date Received: 09/05/14 10:49

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	111423	09/05/14 10:15	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	111485	09/09/14 12:21	DNS	TAL TAL
	Instrument ID: CHLCJ									

Client Sample ID: DUP 090414

Lab Sample ID: 180-36402-12

Date Collected: 09/04/14 00:00

Matrix: Solid

Date Received: 09/05/14 10:49

Percent Solids: 83.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8315_S_Prep			20.4 g	4.0 mL	111503	09/10/14 07:30	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.4 g	4.0 mL	111534	09/10/14 15:14	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Analysis	Moisture		1			111459	09/08/14 10:54	JPG	TAL TAL
	Instrument ID: AND EK610									

Laboratory References:

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Analyst References:

Lab: TAL TAL

Batch Type: Prep

DNS = Daniel Smith

Batch Type: Analysis

DNS = Daniel Smith

JPG = Jeremy Gaskin

Client Sample ID: SW-5 Langan

Lab Sample ID: 180-36402-1
Date Collected: 09/04/14 11:25
Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/05/14 10:15	09/08/14 19:44	1

Client Sample ID: Sed-103

Lab Sample ID: 180-36402-2
Date Collected: 09/04/14 12:20
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 81.9

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	510		120	95	ug/Kg	☼	09/10/14 07:30	09/10/14 14:15	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82		0.00010	0.00010	%			09/08/14 10:54	1

Client Sample ID: SW-4 Langan

Lab Sample ID: 180-36402-3
Date Collected: 09/04/14 12:35
Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/05/14 10:15	09/08/14 19:56	1

Client Sample ID: Sed-102

Lab Sample ID: 180-36402-4
Date Collected: 09/04/14 13:10
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 75.3

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	130		130	100	ug/Kg	☼	09/10/14 07:30	09/10/14 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	75		0.00010	0.00010	%			09/08/14 10:54	1

Client Sample ID: SW-3 Langan

Lab Sample ID: 180-36402-5
Date Collected: 09/04/14 13:20
Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/05/14 10:15	09/08/14 20:07	1

Client Sample ID: Sed-101

Lab Sample ID: 180-36402-6
Date Collected: 09/04/14 14:00
Matrix: Solid
Date Received: 09/05/14 10:49
Percent Solids: 82.1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	390		120	95	ug/Kg	☼	09/10/14 07:30	09/10/14 15:03	1

Client Sample ID: Sed-101 — **Lab Sample ID: 180-36402-6**
Date Collected: 09/04/14 14:00 — Matrix: Solid
Date Received: 09/05/14 10:49

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	82		0.00010	0.00010	%			09/08/14 10:54	1

Client Sample ID: SG-7 — **Lab Sample ID: 180-36402-7**
Date Collected: 09/04/14 14:30 — Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/05/14 10:15	09/08/14 20:19	1

Client Sample ID: SG-5 — **Lab Sample ID: 180-36402-8**
Date Collected: 09/04/14 15:15 — Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	14	J H	50	5.0	ug/L		09/05/14 10:15	09/09/14 11:45	1

Client Sample ID: SG-6 — **Lab Sample ID: 180-36402-9**
Date Collected: 09/04/14 16:00 — Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND	H	50	5.0	ug/L		09/05/14 10:15	09/09/14 11:57	1

Client Sample ID: SW-2 Langan — **Lab Sample ID: 180-36402-10**
Date Collected: 09/04/14 16:15 — Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	5.5	J H	50	5.0	ug/L		09/05/14 10:15	09/09/14 12:09	1

Client Sample ID: SW-1 Langan — **Lab Sample ID: 180-36402-11**
Date Collected: 09/04/14 16:30 — Matrix: Water
Date Received: 09/05/14 10:49

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	7.0	J H	50	5.0	ug/L		09/05/14 10:15	09/09/14 12:21	1

Client Sample ID: DUP 090414 — **Lab Sample ID: 180-36402-12**
Date Collected: 09/04/14 00:00 — Matrix: Solid
Date Received: 09/05/14 10:49 — Percent Solids: 83.0

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	690		120	92	ug/Kg	☼	09/10/14 07:30	09/10/14 15:14	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-36402-1

Client Sample ID: DUP 090414
Date Collected: 09/04/14 00:00
Date Received: 09/05/14 10:49

Lab Sample ID: 180-36402-12
Matrix: Solid

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids	83		0.00010	0.00010	%			09/08/14 10:54	1

Method: 8315A - Carbonyl Compounds (HPLC)

Lab Sample ID: MB 640-111423/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 111477 — **Prep Batch: 111423**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		09/05/14 10:15	09/08/14 17:34	1

Lab Sample ID: LCS 640-111423/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 111477 — **Prep Batch: 111423**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Formaldehyde	150	156		ug/L		104	73 - 133

Lab Sample ID: LCSD 640-111423/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 111477 — **Prep Batch: 111423**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	150	158		ug/L		105	73 - 133	1	20

Lab Sample ID: MB 640-111503/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 111534 — **Prep Batch: 111503**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		100	78	ug/Kg		09/10/14 07:30	09/10/14 13:40	1

Lab Sample ID: LCS 640-111503/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 111534 — **Prep Batch: 111503**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Formaldehyde	746	731		ug/Kg		98	70 - 141

Lab Sample ID: LCSD 640-111503/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 111534 — **Prep Batch: 111503**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	750	742		ug/Kg		99	70 - 141	1	20

Lab Sample ID: 180-36402-4 MS — **Client Sample ID: Sed-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 111534 — **Prep Batch: 111503**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Formaldehyde	130		977	389		ug/Kg	☼	26	18 - 153

Lab Sample ID: 180-36402-4 MSD — **Client Sample ID: Sed-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 111534 — **Prep Batch: 111503**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	130		996	426		ug/Kg	☼	30	18 - 153	9	22

HPLC/IC

Prep Batch: 111423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-1	SW-5 Langan	Total/NA	Water	8315_W_Prep	
180-36402-3	SW-4 Langan	Total/NA	Water	8315_W_Prep	
180-36402-5	SW-3 Langan	Total/NA	Water	8315_W_Prep	
180-36402-7	SG-7	Total/NA	Water	8315_W_Prep	
180-36402-8	SG-5	Total/NA	Water	8315_W_Prep	
180-36402-9	SG-6	Total/NA	Water	8315_W_Prep	
180-36402-10	SW-2 Langan	Total/NA	Water	8315_W_Prep	
180-36402-11	SW-1 Langan	Total/NA	Water	8315_W_Prep	
LCS 640-111423/2-A	Lab Control Sample	Total/NA	Water	8315_W_Prep	
LCSD 640-111423/3-A	Lab Control Sample Dup	Total/NA	Water	8315_W_Prep	
MB 640-111423/1-A	Method Blank	Total/NA	Water	8315_W_Prep	

Analysis Batch: 111477

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-1	SW-5 Langan	Total/NA	Water	8315A	111423
180-36402-3	SW-4 Langan	Total/NA	Water	8315A	111423
180-36402-5	SW-3 Langan	Total/NA	Water	8315A	111423
180-36402-7	SG-7	Total/NA	Water	8315A	111423
LCS 640-111423/2-A	Lab Control Sample	Total/NA	Water	8315A	111423
LCSD 640-111423/3-A	Lab Control Sample Dup	Total/NA	Water	8315A	111423
MB 640-111423/1-A	Method Blank	Total/NA	Water	8315A	111423

Analysis Batch: 111485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-8	SG-5	Total/NA	Water	8315A	111423
180-36402-9	SG-6	Total/NA	Water	8315A	111423
180-36402-10	SW-2 Langan	Total/NA	Water	8315A	111423
180-36402-11	SW-1 Langan	Total/NA	Water	8315A	111423

Prep Batch: 111503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-2	Sed-103	Total/NA	Solid	8315_S_Prep	
180-36402-4	Sed-102	Total/NA	Solid	8315_S_Prep	
180-36402-4 MS	Sed-102	Total/NA	Solid	8315_S_Prep	
180-36402-4 MSD	Sed-102	Total/NA	Solid	8315_S_Prep	
180-36402-6	Sed-101	Total/NA	Solid	8315_S_Prep	
180-36402-12	DUP 090414	Total/NA	Solid	8315_S_Prep	
LCS 640-111503/2-A	Lab Control Sample	Total/NA	Solid	8315_S_Prep	
LCSD 640-111503/3-A	Lab Control Sample Dup	Total/NA	Solid	8315_S_Prep	
MB 640-111503/1-A	Method Blank	Total/NA	Solid	8315_S_Prep	

Analysis Batch: 111534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-2	Sed-103	Total/NA	Solid	8315A	111503
180-36402-4	Sed-102	Total/NA	Solid	8315A	111503
180-36402-4 MS	Sed-102	Total/NA	Solid	8315A	111503
180-36402-4 MSD	Sed-102	Total/NA	Solid	8315A	111503
180-36402-6	Sed-101	Total/NA	Solid	8315A	111503
180-36402-12	DUP 090414	Total/NA	Solid	8315A	111503
LCS 640-111503/2-A	Lab Control Sample	Total/NA	Solid	8315A	111503
LCSD 640-111503/3-A	Lab Control Sample Dup	Total/NA	Solid	8315A	111503

HPLC/IC (Continued)

Analysis Batch: 111534 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 640-111503/1-A	Method Blank	Total/NA	Solid	8315A	111503

General Chemistry

Analysis Batch: 111459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-36402-2	Sed-103	Total/NA	Solid	Moisture	
180-36402-4	Sed-102	Total/NA	Solid	Moisture	
180-36402-6	Sed-101	Total/NA	Solid	Moisture	
180-36402-12	DUP 090414	Total/NA	Solid	Moisture	

TestAmerica Pittsburgh
301 Alpha Drive
Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

052721

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

10/9/2014

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hamish	Site Contact: Joe Lago	Date: 9.4.14	COC No: 1 of 1 COCs
Company Name: ARCADIS	Tel/Fax: 724-742-9180	Lab Contact: Veronica Boros	Carrier: FedEx	Sampler:
Address: 6041 Wallace Rd Ext	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Wexford, PA	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
Phone: 724-742-9180	TAT if different from Below _____			Lab Sampling:
Fax: 724-742-9189	☐ 2 weeks			
Project Name: Indspec - Petrolia	☐ 1 week			Job / SDG No.:
Site: Petrolia, PA	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8315 - Formaldehyde	Sample Specific Notes:
SW-5 Langan	9.4.14	1125	G	WT	1	N	N	X	
Sed-103		1220	C	SO	1	N	N	X	
SW-4 Langan		1235	G	WT	1	N	N	X	
Sed-102		1310	C	SO	3	N	Y	X	
SW-3 Langan		1320	G	WT	1	N	N	X	
Sed-101		1400	C	SO	1	N	N	X	
SG-7		1430	G	WT	1	N	N	X	
SG-5		1515	G	WT	1	N	N	X	
SG-6		1600	G	WT	1	N	N	X	
SW-2 Langan		1615	G	WT	1	N	N	X	
SW-1 Langan		1630	G	WT	1	N	N	X	
DUP090414	↓	—	C	SO	1	N	N	X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

2.2°C

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ | Therm ID No.:_____

Relinquished by: Joseph R Zano	Company: ARCADIS	Date/Time: 9.4.14/1800	Received by:	Company: FAT	Date/Time: 09/05/14 0940
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Login Number: 36402

List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Bortot, Veronica

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Login Number: 36402
List Number: 2
Creator: Gaskin, Jeremy P

List Source: TestAmerica Tallahassee
List Creation: 09/05/14 11:44 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-39575-1
Client Project/Site: INDSPEC, Petrolia PA

For:
ARCADIS U.S. Inc
6041 Wallace Road Extension
Suite 300
Wexford, Pennsylvania 15090

Attn: Mark Hanish

Veronica Bortot

Authorized for release by:
12/30/2014 5:14:35 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

Links

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 180-39575-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-39575-1

Comments
No additional comments.

Receipt
The samples were received on 12/5/2014 6:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 6 coolers at receipt time were 1.1º C, 1.5º C, 1.6º C, 3.6º C, 3.7º C and 4.2º C.

GC/MS VOA
Method(s) 8260B: The following analyte(s) recovered outside control limits for the LCS associated with batch 127750: Tran3-1,3-Dichloropropene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Anions
Method(s) 300.0: The following samples were diluted due to the nature of the sample matrix: SED-102 (180-39575-4), SED-102 (180-39575-4 MS), SED-102 (180-39575-4 MSD). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS
Method(s) In-House: The following sample(s) was diluted due to the nature of the sample matrix: (180-39575-2), (180-39575-2 MS), (180-39575-4), (180-39575-4 MS), (180-39575-4 MSD), (180-39575-6), (180-39575-6 MS), (180-39575-7), (180-39575-7 MS), DUP120314 (180-39575-7), SED-101 (180-39575-6), SED-102 (180-39575-4), SED-102 (180-39575-4 MS), SED-102 (180-39575-4 MSD), SED-103 (180-39575-2). Elevated reporting limits (RLs) are provided.

Method(s) In-House: This method requires the acquisition of an initial calibration curve followed by a second analysis of each ICAL point embedded within the analytical sequence. Unfortunately, the "embedded" ICAL was adversely affected by the non-target matrix for all target compounds except m-BDSA. The responses for the other 4 analytes climbed throughout the run, resulting in an invalid ICAL. Since the initial ICAL curve produced a compliant calibration, and valid ICV, LLCS and LCS, the analyst decided to convert the embedded ICAL points into CCVs to display the changes seen during the sequence. This decision was made based on the poor recoveries of the matrix spikes in the samples, which confirmed our previous results in September. Rerunning the sequence could not have occurred until after the sample holding times had expired, and would have confirmed the results of the original run or shown the recoveries to be lower had the responses not risen. Each of the CCVs displays high recoveries for p-PSA, BSA, resorcinol and THD.

Method(s) In-House: This CCVs displays high recoveries for p-PSA, BSA, resorcinol and THD, which is consistent with the results found after running samples in Batch 81860.

Method(s) In-House: CCV fails high for THD (22.6%-limit 20%) .

Method(s) In-House: Low level laboratory control sample (LLCS) for batch 81831 recovered low for BSA. The continuing calibration verification (CCV) immediately following the LLCS recovered 16% low for BSA, signifying a potential trend in the response of this compound at this point of the run.
(LLCS 200-81831/2-A)

Method(s) In-House: The laboratory control sample (LCS) for batch 81831 recovered outside control limits for THD. The continuing

Job ID: 180-39575-1 (Continued)

Laboratory: TestAmerica Pittsburgh (Continued)

calibration verification (CCV) immediately following the LCS and all remaining CCVs associated with this batch showed elevated recovery and exceeded continuing calibration limits. (LCS 200-81831/3-A)

Method(s) In-House: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following samples associated with batch 81831 were outside control limits: (180-39575-2 MS), (180-39575-4 MS), (180-39575-4 MSD), (180-39575-6 MS), (180-39575-7 MS), SED-102 (180-39575-4 MS), SED-102 (180-39575-4 MSD).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
*	LCS or LCSD exceeds the control limits
F1	MS and/or MSD Recovery exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery exceeds the control limits
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery exceeds the control limits
*	LCS or LCSD exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Laboratory: TestAmerica Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-15

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Burlington

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	68-00489	04-30-15

Laboratory: TestAmerica Tallahassee

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E81005	06-30-15
Georgia	State Program	4		06-30-15
Louisiana	NELAP	6	30663	06-30-15
New Jersey	NELAP	2	FL012	06-30-15
Texas	NELAP	6	T104704459-11-2	03-31-15
USDA	Federal		P330-08-00158	10-14-17

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-39575-1	SW-5_LANGAN	Water	12/03/14 10:45	12/05/14 18:40
180-39575-2	SED-103	Solid	12/03/14 11:00	12/05/14 18:40
180-39575-3	SW-4_LANGAN	Water	12/03/14 11:10	12/05/14 18:40
180-39575-4	SED-102	Solid	12/03/14 11:20	12/05/14 18:40
180-39575-5	SW-3_LANGAN	Water	12/03/14 11:40	12/05/14 18:40
180-39575-6	SED-101	Solid	12/03/14 12:00	12/05/14 18:40
180-39575-7	DUP120314	Solid	12/03/14 00:00	12/05/14 18:40
180-39575-8	SG-7	Water	12/03/14 12:20	12/05/14 18:40
180-39575-9	SG-5	Water	12/03/14 12:35	12/05/14 18:40
180-39575-10	SG-4	Water	12/04/14 09:55	12/05/14 18:40
180-39575-11	SG-3	Water	12/04/14 10:20	12/05/14 18:40
180-39575-12	DUP120414	Water	12/04/14 00:00	12/05/14 18:40
180-39575-13	SG-8	Water	12/04/14 10:45	12/05/14 18:40
180-39575-14	SW-1	Water	12/04/14 10:55	12/05/14 18:40
180-39575-15	SG-2	Water	12/04/14 11:15	12/05/14 18:40
180-39575-16	SH-1	Water	12/04/14 11:30	12/05/14 18:40
180-39575-17	SG-1	Water	12/04/14 11:40	12/05/14 18:40
180-39575-18	SG-6	Water	12/04/14 13:00	12/05/14 18:40
180-39575-19	SW-2_LANGAN	Water	12/04/14 13:10	12/05/14 18:40
180-39575-20	SW-1_LANGAN	Water	12/04/14 13:20	12/05/14 18:40
180-39575-21	FB120414	Water	12/04/14 14:40	12/05/14 18:40
180-39575-22	TRIP BLANK	Water	12/04/14 00:00	12/05/14 18:40

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL PIT
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL PIT
300.0	Anions, Ion Chromatography	MCAWW	TAL PIT
8315A	Carbonyl Compounds (HPLC)	SW846	TAL TAL
In-House	Sulfonic Acids by LCMS/MS	TAL-BUR	TAL BUR
2540G	SM 2540G	SM22	TAL PIT

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TAL-BUR = TestAmerica Laboratories, Burlington, Facility Standard Operating Procedure.

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Client Sample ID: SW-5_LANGAN

Lab Sample ID: 180-39575-1

Date Collected: 12/03/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 12:44	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127659	12/09/14 08:31	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	127827	12/10/14 12:21	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/20/14 20:20	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 13:17	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 13:27	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SED-103

Lab Sample ID: 180-39575-2

Date Collected: 12/03/14 11:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 85.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0002 g	5 mL	127772	12/10/14 05:05	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0002 g	5 mL	127750	12/10/14 09:22	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.2608 g	100 mL	129253	12/23/14 13:00	CMR	TAL PIT
Soluble	Analysis	300.0		1	1 mL		129332	12/24/14 11:28	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_S_Prep			20.2 g	4.0 mL	113540	12/08/14 07:45	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.2 g	4.0 mL	113605	12/10/14 09:37	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			10.12 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		40	10.12 g	20 mL	81860	12/09/14 20:23	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			10.12 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		2	10.12 g	20 mL	81860	12/09/14 23:29	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			127602	12/08/14 15:03	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SW-4_LANGAN

Lab Sample ID: 180-39575-3

Date Collected: 12/03/14 11:10

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 15:56	DLF	TAL PIT
	Instrument ID: CHHP5									

Client Sample ID: SW-4_LANGAN

Lab Sample ID: 180-39575-3

Date Collected: 12/03/14 11:10

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			270 mL	0.25 mL	127659	12/09/14 08:31	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	127827	12/10/14 12:50	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/20/14 20:55	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 13:29	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 13:59	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SED-102

Lab Sample ID: 180-39575-4

Date Collected: 12/03/14 11:20

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 73.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0002 g	5 mL	127772	12/10/14 05:05	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0002 g	5 mL	127750	12/10/14 07:07	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.1914 g	100 mL	129253	12/23/14 13:00	CMR	TAL PIT
Soluble	Analysis	300.0		10	1 mL		129332	12/24/14 11:43	CMR	TAL PIT
	Instrument ID: CHIC25									
Total/NA	Prep	8315_S_Prep			20.2 g	4.0 mL	113540	12/08/14 07:45	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.2 g	4.0 mL	113605	12/10/14 09:49	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			10.01 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		40	10.01 g	20 mL	81860	12/09/14 20:56	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			10.01 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		2	10.01 g	20 mL	81860	12/09/14 23:51	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			127602	12/08/14 15:03	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SW-3_LANGAN

Lab Sample ID: 180-39575-5

Date Collected: 12/03/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 16:21	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127659	12/09/14 08:31	BJT	TAL PIT

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SW-3_LANGAN

Lab Sample ID: 180-39575-5

Date Collected: 12/03/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	127827	12/10/14 13:18	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/20/14 22:39	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 13:41	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 14:21	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SED-101

Lab Sample ID: 180-39575-6

Date Collected: 12/03/14 12:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0008 g	5 mL	127772	12/10/14 05:05	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0008 g	5 mL	127750	12/10/14 09:44	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.0373 g	100 mL	129253	12/23/14 13:00	CMR	TAL PIT
Soluble	Analysis	300.0		1	1 mL		129476	12/30/14 02:22	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Prep	8315_S_Prep			20.2 g	4.0 mL	113540	12/08/14 07:45	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.2 g	4.0 mL	113605	12/10/14 10:24	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			10.11 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		100	10.11 g	20 mL	81860	12/09/14 21:51	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			10.11 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		40	10.11 g	20 mL	81860	12/09/14 22:01	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			127602	12/08/14 15:03	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP120314

Lab Sample ID: 180-39575-7

Date Collected: 12/03/14 00:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.0009 g	5 mL	127772	12/10/14 05:05	KLG	TAL PIT
Total/NA	Analysis	8260B		1	5.0009 g	5 mL	127750	12/10/14 10:06	KLG	TAL PIT
	Instrument ID: CHHP3									
Soluble	Leach	DI Leach			010.1405 g	100 mL	129253	12/23/14 13:00	CMR	TAL PIT

Client Sample ID: DUP120314

Lab Sample ID: 180-39575-7

Date Collected: 12/03/14 00:00
Matrix: Solid
Date Received: 12/05/14 18:40
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Analysis	300.0		1	1 mL		129476	12/30/14 02:38	MJH	TAL PIT
	Instrument ID: CHIC2100A									
Total/NA	Prep	8315_S_Prep			20.0 g	4.0 mL	113540	12/08/14 07:45	DNS	TAL TAL
Total/NA	Analysis	8315A		1	20.0 g	4.0 mL	113605	12/10/14 10:36	DNS	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			10.15 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		100	10.15 g	20 mL	81860	12/09/14 22:34	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Prep	In House			10.15 g	20 mL	81831	12/08/14 15:50	BWC	TAL BUR
Total/NA	Analysis	In-House		40	10.15 g	20 mL	81860	12/09/14 22:56	BWC	TAL BUR
	Instrument ID: LC3062B									
Total/NA	Analysis	2540G		1			127602	12/08/14 15:03	AB1	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SG-7

Lab Sample ID: 180-39575-8

Date Collected: 12/03/14 12:20
Matrix: Water
Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 16:45	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127659	12/09/14 08:31	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	127827	12/10/14 13:46	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 14:47	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 13:53	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 14:43	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-5

Lab Sample ID: 180-39575-9

Date Collected: 12/03/14 12:35
Matrix: Water
Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 17:09	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127659	12/09/14 08:31	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	127827	12/10/14 14:14	VVP	TAL PIT
	Instrument ID: CH731									

Client Sample ID: SG-5

Lab Sample ID: 180-39575-9

Date Collected: 12/03/14 12:35

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	1 mL		128954	12/20/14 23:48	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 14:04	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 15:15	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-4

Lab Sample ID: 180-39575-10

Date Collected: 12/04/14 09:55

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128326	12/15/14 13:43	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:24	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 17:01	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 13:28	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 14:16	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 15:38	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-3

Lab Sample ID: 180-39575-11

Date Collected: 12/04/14 10:20

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 17:33	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:24	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 18:25	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/21/14 00:23	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 14:52	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR

Client Sample ID: SG-3

Lab Sample ID: 180-39575-11

Date Collected: 12/04/14 10:20

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 16:21	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: DUP120414

Lab Sample ID: 180-39575-12

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 17:57	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:24	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 18:49	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/21/14 00:57	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 15:15	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 16:43	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-8

Lab Sample ID: 180-39575-13

Date Collected: 12/04/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 18:45	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:24	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 19:13	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/21/14 01:32	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 15:27	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 17:17	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-1

Lab Sample ID: 180-39575-14

Date Collected: 12/04/14 10:55

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 19:09	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:24	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 19:37	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		128954	12/21/14 02:07	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 15:39	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 17:38	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-2

Lab Sample ID: 180-39575-15

Date Collected: 12/04/14 11:15

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 19:34	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 20:01	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 15:05	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 15:51	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 18:00	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SH-1

Lab Sample ID: 180-39575-16

Date Collected: 12/04/14 11:30

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128456	12/16/14 15:48	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 20:25	VVP	TAL PIT
	Instrument ID: CH731									

Client Sample ID: SH-1

Lab Sample ID: 180-39575-16

Date Collected: 12/04/14 11:30

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 15:22	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 16:02	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 18:33	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-1

Lab Sample ID: 180-39575-17

Date Collected: 12/04/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128456	12/16/14 16:12	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 20:49	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 15:39	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 16:14	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 18:55	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SG-6

Lab Sample ID: 180-39575-18

Date Collected: 12/04/14 13:00

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128456	12/16/14 16:36	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 21:13	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 15:57	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 16:26	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SG-6

Lab Sample ID: 180-39575-18

Date Collected: 12/04/14 13:00
Matrix: Water
Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 19:17	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-2_LANGAN

Lab Sample ID: 180-39575-19

Date Collected: 12/04/14 13:10
Matrix: Water
Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128456	12/16/14 17:00	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 21:37	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 16:49	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 16:38	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 19:50	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: SW-1_LANGAN

Lab Sample ID: 180-39575-20

Date Collected: 12/04/14 13:20
Matrix: Water
Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128456	12/16/14 17:24	DLF	TAL PIT
	Instrument ID: CHHP6									
Total/NA	Prep	3520C			270 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	270 mL	0.25 mL	128007	12/11/14 22:01	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 17:06	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 16:50	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 20:12	BWC	TAL BUR
	Instrument ID: LC3062B									

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: FB120414

Lab Sample ID: 180-39575-21

Date Collected: 12/04/14 14:40

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128468	12/16/14 13:08	DLF	TAL PIT
	Instrument ID: CHHP5									
Total/NA	Prep	3520C			260 mL	0.25 mL	127798	12/10/14 08:26	BJT	TAL PIT
Total/NA	Analysis	8270C LL		1	260 mL	0.25 mL	128007	12/11/14 22:25	VVP	TAL PIT
	Instrument ID: CH731									
Total/NA	Analysis	300.0		1	1 mL		129078	12/22/14 17:23	MJH	TAL PIT
	Instrument ID: CHICS2100B									
Total/NA	Prep	8315_W_Prep			100 mL	4.0 mL	113508	12/05/14 10:51	DNS	TAL TAL
Total/NA	Analysis	8315A		1	100 mL	4.0 mL	113556	12/08/14 17:01	RDD	TAL TAL
	Instrument ID: CHLCJ									
Total/NA	Prep	In House			2.5 mL	2.5 mL	81835	12/09/14 15:47	BWC	TAL BUR
Total/NA	Analysis	In-House		10	2.5 mL	2.5 mL	81886	12/10/14 20:34	BWC	TAL BUR
	Instrument ID: LC3062B									

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-39575-22

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	5 mL	5 mL	128326	12/15/14 14:07	DLF	TAL PIT
	Instrument ID: CHHP6									

Laboratory References:

TAL BUR = TestAmerica Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

TAL TAL = TestAmerica Tallahassee, 2846 Industrial Plaza Drive, Tallahassee, FL 32301, TEL (850)878-3994

Analyst References:

Lab: TAL BUR

Batch Type: Prep

BWC = Bradley Chirgwin

Batch Type: Analysis

BWC = Bradley Chirgwin

Lab: TAL PIT

Batch Type: Leach

CMR = Carl Reagle

Batch Type: Prep

BJT = Bill Trout

KLG = Kathy Gordon

Batch Type: Analysis

AB1 = Ashwin Baikadi

CMR = Carl Reagle

DLF = Donald Ferguson

KLG = Kathy Gordon

MJH = Matthew Hartman

VVP = Vincent Piccolino

Lab: TAL TAL

Batch Type: Prep

DNS = Daniel Smith

Batch Type: Analysis

DNS = Daniel Smith

RDD = Robert Driver

Client Sample ID: SW-5_LANGAN
Date Collected: 12/03/14 10:45
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 12:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 12:44	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 12:44	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 12:44	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 12:44	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 12:44	1
1,2-Dichlorobenzene	**0.63**	**J**	1.0	0.15	ug/L			12/16/14 12:44	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 12:44	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 12:44	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 12:44	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 12:44	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 12:44	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 12:44	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 12:44	1
Acetone	**2.5**	**J**	5.0	2.5	ug/L			12/16/14 12:44	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 12:44	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 12:44	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 12:44	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Chlorobenzene	**0.34**	**J**	1.0	0.14	ug/L			12/16/14 12:44	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 12:44	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 12:44	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 12:44	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 12:44	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 12:44	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 12:44	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Ethyl ether	**8.6**		1.0	0.082	ug/L			12/16/14 12:44	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 12:44	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 12:44	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 12:44	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 12:44	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 12:44	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 12:44	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 12:44	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 12:44	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 12:44	1

Client Sample ID: SW-5_LANGAN

Lab Sample ID: 180-39575-1

Date Collected: 12/03/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*		*12/16/14 12:44*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 12:44*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 128*		*12/16/14 12:44*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 12:44*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*79*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
2-Fluorobiphenyl	*63*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
2-Fluorophenol	*55*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Nitrobenzene-d5	*62*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Phenol-d5	*55*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Terphenyl-d14	*62*		*10 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**84**		1.0	0.21	mg/L			12/20/14 20:20	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:17	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**890**		50	18	ug/L		12/09/14 15:47	12/10/14 13:27	10
p-Phenolsulfonic acid	**97**		50	8.4	ug/L		12/09/14 15:47	12/10/14 13:27	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 13:27	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 13:27	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 13:27	10

Client Sample ID: SED-103

Lab Sample ID: 180-39575-2

Date Collected: 12/03/14 11:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 85.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.8	0.57	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2,2-Tetrachloroethane	ND		5.8	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2-Trichloroethane	ND		5.8	0.97	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1-Dichloroethane	ND		5.8	0.67	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1-Dichloroethene	ND		5.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2,4-Trichlorobenzene	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dibromo-3-Chloropropane	ND		5.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichlorobenzene	ND		5.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichloroethane	ND		5.8	0.72	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichloropropane	ND		5.8	0.63	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,3-Dichlorobenzene	ND		5.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1

Client Sample ID: SED-103
Date Collected: 12/03/14 11:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-2
Matrix: Solid
Percent Solids: 85.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		5.8	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
2-Butanone (MEK)	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
2-Hexanone	ND		5.8	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.8	0.76	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Acetone	ND		23	5.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Benzene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Bromoform	ND		5.8	0.52	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Bromomethane	ND		5.8	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Carbon disulfide	**1.4**	**J**	5.8	0.60	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Carbon tetrachloride	ND		5.8	0.52	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chlorobenzene	ND		5.8	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chlorodibromomethane	ND		5.8	0.83	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloroethane	ND		5.8	1.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloroform	ND		5.8	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloromethane	ND		5.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
cis-1,2-Dichloroethene	ND		5.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
cis-1,3-Dichloropropene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Cyclohexane	ND		5.8	0.43	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Dichlorobromomethane	ND		5.8	0.66	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Dichlorodifluoromethane	ND		5.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Ethyl ether	**8.1**		5.8	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Ethylbenzene	ND		5.8	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dibromoethane	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Isopropylbenzene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methyl acetate	ND		5.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methyl tert-butyl ether	ND		5.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methylcyclohexane	ND		5.8	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methylene Chloride	**6.1**	**B**	5.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Styrene	ND		5.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Tetrachloroethene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Toluene	ND		5.8	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
trans-1,2-Dichloroethene	ND		5.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
trans-1,3-Dichloropropene	ND	*	5.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Trichloroethene	ND		5.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Trichlorofluoromethane	ND		5.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Vinyl chloride	ND		5.8	0.55	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*52 - 124*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
4-Bromofluorobenzene (Surr)	*87*		*63 - 120*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
Dibromofluoromethane (Surr)	*91*		*68 - 121*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
Toluene-d8 (Surr)	*102*		*72 - 127*	*12/10/14 05:05*	*12/10/14 09:22*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**290**		11	2.4	mg/Kg	☼		12/24/14 11:28	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**270**		120	90	ug/Kg	☼	12/08/14 07:45	12/10/14 09:37	1

Client Sample ID: SED-103

Lab Sample ID: 180-39575-2

Date Collected: 12/03/14 11:00

Matrix: Solid

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
p-Phenolsulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
Benzenesulfonic acid	ND	*	20	20	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
Resorcinol	ND		400	400	ug/Kg		12/08/14 15:50	12/09/14 20:23	40
2,3',4-Trihydroxydiphenyl	ND	*	1200	1200	ug/Kg		12/08/14 15:50	12/09/14 20:23	40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**14**		0.10	0.10	%			12/08/14 15:03	1
Percent Solids	**86**		0.10	0.10	%			12/08/14 15:03	1

Client Sample ID: SW-4_LANGAN

Lab Sample ID: 180-39575-3

Date Collected: 12/03/14 11:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 15:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 15:56	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 15:56	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 15:56	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 15:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 15:56	1
1,2-Dichlorobenzene	**0.75**	**J**	1.0	0.15	ug/L			12/16/14 15:56	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 15:56	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 15:56	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 15:56	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 15:56	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 15:56	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 15:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 15:56	1
Acetone	**2.6**	**J**	5.0	2.5	ug/L			12/16/14 15:56	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 15:56	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 15:56	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 15:56	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Chlorobenzene	**0.45**	**J**	1.0	0.14	ug/L			12/16/14 15:56	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 15:56	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 15:56	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 15:56	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 15:56	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 15:56	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 15:56	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Ethyl ether	**8.1**		1.0	0.082	ug/L			12/16/14 15:56	1

Client Sample ID: SW-4_LANGAN
Date Collected: 12/03/14 11:10
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-3
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 15:56	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 15:56	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 15:56	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 15:56	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 15:56	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 15:56	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 15:56	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 15:56	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*12/16/14 15:56*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 118*		*12/16/14 15:56*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 15:56*	*1*
Toluene-d8 (Surr)	*97*		*71 - 118*		*12/16/14 15:56*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*83*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
2-Fluorobiphenyl	*73*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
2-Fluorophenol	*62*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Nitrobenzene-d5	*70*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Phenol-d5	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Terphenyl-d14	*73*		*10 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**83**		1.0	0.21	mg/L			12/20/14 20:55	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:29	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**550**		50	18	ug/L		12/09/14 15:47	12/10/14 13:59	10
p-Phenolsulfonic acid	**73**		50	8.4	ug/L		12/09/14 15:47	12/10/14 13:59	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 13:59	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 13:59	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 13:59	10

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SED-102
Date Collected: 12/03/14 11:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-4
Matrix: Solid
Percent Solids: 73.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.8	0.66	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2,2-Tetrachloroethane	ND		6.8	0.98	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.8	1.5	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2-Trichloroethane	ND		6.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1-Dichloroethane	ND		6.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1-Dichloroethene	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2,4-Trichlorobenzene	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dibromo-3-Chloropropane	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichlorobenzene	**3.0**	**J**	6.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichloroethane	ND		6.8	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichloropropane	ND		6.8	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,3-Dichlorobenzene	ND		6.8	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,4-Dichlorobenzene	ND		6.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
2-Butanone (MEK)	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
2-Hexanone	ND		6.8	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
4-Methyl-2-pentanone (MIBK)	ND		6.8	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Acetone	ND		27	6.8	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Benzene	**17**		6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Bromoform	ND		6.8	0.60	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Bromomethane	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Carbon disulfide	ND		6.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Carbon tetrachloride	ND		6.8	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chlorobenzene	**2.3**	**J**	6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chlorodibromomethane	ND		6.8	0.97	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloroethane	ND		6.8	2.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloroform	ND		6.8	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloromethane	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
cis-1,2-Dichloroethene	ND		6.8	0.96	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
cis-1,3-Dichloropropene	ND		6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Cyclohexane	**11**		6.8	0.51	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Dichlorobromomethane	ND		6.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Dichlorodifluoromethane	ND		6.8	0.91	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Ethyl ether	ND		6.8	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Ethylbenzene	**3.1**	**J**	6.8	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dibromoethane	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Isopropylbenzene	**2.0**	**J**	6.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methyl acetate	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methyl tert-butyl ether	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methylcyclohexane	**48**		6.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methylene Chloride	**4.6**	**J B**	6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Styrene	ND		6.8	0.96	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Tetrachloroethene	ND		6.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Toluene	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
trans-1,2-Dichloroethene	ND		6.8	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
trans-1,3-Dichloropropene	ND	*	6.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Trichloroethene	ND		6.8	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Trichlorofluoromethane	ND		6.8	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Vinyl chloride	ND		6.8	0.64	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1

Client Sample ID: SED-102

Lab Sample ID: 180-39575-4

Date Collected: 12/03/14 11:20
Matrix: Solid
Date Received: 12/05/14 18:40
Percent Solids: 73.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*52 - 124*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
4-Bromofluorobenzene (Surr)	*79*		*63 - 120*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
Dibromofluoromethane (Surr)	*90*		*68 - 121*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
Toluene-d8 (Surr)	*108*		*72 - 127*	*12/10/14 05:05*	*12/10/14 07:07*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**140**		130	29	mg/Kg	☼		12/24/14 11:43	10

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**1100**		140	110	ug/Kg	☼	12/08/14 07:45	12/10/14 09:49	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**400**		20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
p-Phenolsulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
Benzenesulfonic acid	ND	*	20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
Resorcinol	ND		400	400	ug/Kg		12/08/14 15:50	12/09/14 20:56	40
2,3',4-Trihydroxydiphenyl	ND	*	1200	1200	ug/Kg		12/08/14 15:50	12/09/14 20:56	40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**27**		0.10	0.10	%			12/08/14 15:03	1
Percent Solids	**73**		0.10	0.10	%			12/08/14 15:03	1

Client Sample ID: SW-3_LANGAN

Lab Sample ID: 180-39575-5

Date Collected: 12/03/14 11:40
Matrix: Water
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:21	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:21	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:21	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:21	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:21	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:21	1
1,2-Dichlorobenzene	**0.76**	**J**	1.0	0.15	ug/L			12/16/14 16:21	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:21	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:21	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:21	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:21	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:21	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:21	1
Acetone	**3.8**	**J**	5.0	2.5	ug/L			12/16/14 16:21	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:21	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:21	1

Client Sample ID: SW-3_LANGAN
Date Collected: 12/03/14 11:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-5
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:21	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:21	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Chlorobenzene	**0.42**	**J**	1.0	0.14	ug/L			12/16/14 16:21	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:21	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:21	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:21	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:21	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:21	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:21	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:21	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:21	1
Ethyl ether	**13**		1.0	0.082	ug/L			12/16/14 16:21	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:21	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:21	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:21	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:21	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:21	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:21	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:21	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:21	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*12/16/14 16:21*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 16:21*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*12/16/14 16:21*	*1*
Toluene-d8 (Surr)	*96*		*71 - 118*		*12/16/14 16:21*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 13:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*69*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
2-Fluorobiphenyl	*51*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
2-Fluorophenol	*38*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Nitrobenzene-d5	*45*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Phenol-d5	*42*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Terphenyl-d14	*71*		*10 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*

Client Sample ID: SW-3_LANGAN

Lab Sample ID: 180-39575-5

Date Collected: 12/03/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**84**		1.0	0.21	mg/L			12/20/14 22:39	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:41	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2300**		50	18	ug/L		12/09/14 15:47	12/10/14 14:21	10
p-Phenolsulfonic acid	**270**		50	8.4	ug/L		12/09/14 15:47	12/10/14 14:21	10
Benzenesulfonic acid	**12**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 14:21	10
Resorcinol	**21**	**J**	50	5.9	ug/L		12/09/14 15:47	12/10/14 14:21	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 14:21	10

Client Sample ID: SED-101

Lab Sample ID: 180-39575-6

Date Collected: 12/03/14 12:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 83.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.0	0.58	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2,2-Tetrachloroethane	ND		6.0	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.0	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2-Trichloroethane	ND		6.0	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1-Dichloroethane	ND		6.0	0.69	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1-Dichloroethene	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2,4-Trichlorobenzene	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dibromo-3-Chloropropane	ND		6.0	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichlorobenzene	**1.3**	**J**	6.0	0.95	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichloroethane	ND		6.0	0.73	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichloropropane	ND		6.0	0.65	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,3-Dichlorobenzene	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,4-Dichlorobenzene	ND		6.0	0.76	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
2-Butanone (MEK)	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
2-Hexanone	ND		6.0	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
4-Methyl-2-pentanone (MIBK)	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Acetone	ND		24	6.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Benzene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Bromoform	ND		6.0	0.53	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Bromomethane	ND		6.0	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Carbon disulfide	ND		6.0	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Carbon tetrachloride	ND		6.0	0.53	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chlorobenzene	ND		6.0	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chlorodibromomethane	ND		6.0	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloroethane	ND		6.0	1.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloroform	ND		6.0	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloromethane	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
cis-1,2-Dichloroethene	ND		6.0	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
cis-1,3-Dichloropropene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Cyclohexane	ND		6.0	0.44	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1

Client Sample ID: SED-101
Date Collected: 12/03/14 12:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-6
Matrix: Solid
Percent Solids: 83.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		6.0	0.67	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Dichlorodifluoromethane	ND		6.0	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Ethyl ether	**11**		6.0	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Ethylbenzene	ND		6.0	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dibromoethane	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Isopropylbenzene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methyl acetate	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methyl tert-butyl ether	ND		6.0	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methylcyclohexane	ND		6.0	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methylene Chloride	**4.5**	**J B**	6.0	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Styrene	ND		6.0	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Tetrachloroethene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Toluene	ND		6.0	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
trans-1,2-Dichloroethene	ND		6.0	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
trans-1,3-Dichloropropene	ND	*	6.0	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Trichloroethene	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Trichlorofluoromethane	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Vinyl chloride	ND		6.0	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*52 - 124*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
4-Bromofluorobenzene (Surr)	*83*		*63 - 120*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
Dibromofluoromethane (Surr)	*92*		*68 - 121*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
Toluene-d8 (Surr)	*100*		*72 - 127*	*12/10/14 05:05*	*12/10/14 09:44*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1600**	**B**	12	2.5	mg/Kg	☼		12/30/14 02:22	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**1100**		120	92	ug/Kg	☼	12/08/14 07:45	12/10/14 10:24	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**85000**		990	990	ug/Kg		12/08/14 15:50	12/09/14 21:51	100
p-Phenolsulfonic acid	**7200**		400	400	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
Benzenesulfonic acid	**850**	*	400	400	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
Resorcinol	ND		400	400	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
2,3',4-Trihydroxydiphenyl	ND	*	1200	1200	ug/Kg		12/08/14 15:50	12/09/14 22:01	40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16**		0.10	0.10	%			12/08/14 15:03	1
Percent Solids	**84**		0.10	0.10	%			12/08/14 15:03	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: DUP120314
Date Collected: 12/03/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-7
Matrix: Solid
Percent Solids: 79.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.3	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2,2-Tetrachloroethane	ND		6.3	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.3	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2-Trichloroethane	ND		6.3	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1-Dichloroethane	ND		6.3	0.72	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1-Dichloroethene	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2,4-Trichlorobenzene	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dibromo-3-Chloropropane	ND		6.3	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichlorobenzene	**2.1**	**J**	6.3	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichloroethane	ND		6.3	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichloropropane	ND		6.3	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,3-Dichlorobenzene	ND		6.3	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,4-Dichlorobenzene	ND		6.3	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
2-Butanone (MEK)	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
2-Hexanone	ND		6.3	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
4-Methyl-2-pentanone (MIBK)	ND		6.3	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Acetone	ND		25	6.3	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Benzene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Bromoform	ND		6.3	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Bromomethane	ND		6.3	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Carbon disulfide	**1.5**	**J**	6.3	0.64	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Carbon tetrachloride	ND		6.3	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chlorobenzene	ND		6.3	0.95	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chlorodibromomethane	ND		6.3	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloroethane	ND		6.3	1.9	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloroform	ND		6.3	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloromethane	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
cis-1,2-Dichloroethene	ND		6.3	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
cis-1,3-Dichloropropene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Cyclohexane	ND		6.3	0.47	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Dichlorobromomethane	ND		6.3	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Dichlorodifluoromethane	ND		6.3	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Ethyl ether	**13**		6.3	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Ethylbenzene	ND		6.3	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dibromoethane	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Isopropylbenzene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methyl acetate	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methyl tert-butyl ether	ND		6.3	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methylcyclohexane	ND		6.3	0.91	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methylene Chloride	**5.5**	**J B**	6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Styrene	ND		6.3	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Tetrachloroethene	ND		6.3	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Toluene	ND		6.3	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
trans-1,2-Dichloroethene	ND		6.3	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
trans-1,3-Dichloropropene	ND	*	6.3	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Trichloroethene	ND		6.3	0.83	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Trichlorofluoromethane	ND		6.3	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Vinyl chloride	ND		6.3	0.59	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1

Client Sample ID: DUP120314

Lab Sample ID: 180-39575-7

Date Collected: 12/03/14 00:00
Matrix: Solid
Date Received: 12/05/14 18:40
Percent Solids: 79.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*52 - 124*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
4-Bromofluorobenzene (Surr)	*81*		*63 - 120*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
Dibromofluoromethane (Surr)	*93*		*68 - 121*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
Toluene-d8 (Surr)	*105*		*72 - 127*	*12/10/14 05:05*	*12/10/14 10:06*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1500**	**B**	12	2.7	mg/Kg	☼		12/30/14 02:38	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**560**		130	98	ug/Kg	☼	12/08/14 07:45	12/10/14 10:36	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**85000**		990	990	ug/Kg		12/08/14 15:50	12/09/14 22:34	100
p-Phenolsulfonic acid	**7400**		390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
Benzenesulfonic acid	**870**	*	390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
Resorcinol	ND		390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
2,3',4-Trihydroxydiphenyl	ND	*	1200	1200	ug/Kg		12/08/14 15:50	12/09/14 22:56	40

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20**		0.10	0.10	%			12/08/14 15:03	1
Percent Solids	**80**		0.10	0.10	%			12/08/14 15:03	1

Client Sample ID: SG-7

Lab Sample ID: 180-39575-8

Date Collected: 12/03/14 12:20
Matrix: Water
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:45	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:45	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:45	1
1,2-Dichlorobenzene	**0.83**	**J**	1.0	0.15	ug/L			12/16/14 16:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:45	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:45	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:45	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:45	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:45	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:45	1
Acetone	**4.1**	**J**	5.0	2.5	ug/L			12/16/14 16:45	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:45	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:45	1

Client Sample ID: SG-7
Date Collected: 12/03/14 12:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:45	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:45	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Chlorobenzene	**0.49**	**J**	1.0	0.14	ug/L			12/16/14 16:45	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:45	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:45	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:45	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:45	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:45	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:45	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:45	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:45	1
Ethyl ether	**12**		1.0	0.082	ug/L			12/16/14 16:45	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:45	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:45	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:45	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:45	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:45	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:45	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:45	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:45	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 135*		*12/16/14 16:45*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 118*		*12/16/14 16:45*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 128*		*12/16/14 16:45*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 16:45*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*84*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
2-Fluorobiphenyl	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
2-Fluorophenol	*50*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Nitrobenzene-d5	*56*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Phenol-d5	*51*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Terphenyl-d14	*80*		*10 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*

Client Sample ID: SG-7

Lab Sample ID: 180-39575-8

Date Collected: 12/03/14 12:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**79**		1.0	0.21	mg/L			12/22/14 14:47	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**6.3**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 13:53	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**440**		50	18	ug/L		12/09/14 15:47	12/10/14 14:43	10
p-Phenolsulfonic acid	**45**	**J**	50	8.4	ug/L		12/09/14 15:47	12/10/14 14:43	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 14:43	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 14:43	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 14:43	10

Client Sample ID: SG-5

Lab Sample ID: 180-39575-9

Date Collected: 12/03/14 12:35

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:09	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:09	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:09	1
1,2-Dichlorobenzene	**1.0**		1.0	0.15	ug/L			12/16/14 17:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:09	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:09	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:09	1
1,4-Dichlorobenzene	**0.23**	**J**	1.0	0.21	ug/L			12/16/14 17:09	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:09	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:09	1
Acetone	**3.4**	**J**	5.0	2.5	ug/L			12/16/14 17:09	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:09	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:09	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:09	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Chlorobenzene	**0.63**	**J**	1.0	0.14	ug/L			12/16/14 17:09	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:09	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:09	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:09	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:09	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:09	1

Client Sample ID: SG-5
Date Collected: 12/03/14 12:35
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-9
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:09	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Ethyl ether	**5.8**		1.0	0.082	ug/L			12/16/14 17:09	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:09	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:09	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:09	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:09	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:09	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:09	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:09	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:09	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*12/16/14 17:09*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 17:09*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 17:09*	*1*
Toluene-d8 (Surr)	*99*		*71 - 118*		*12/16/14 17:09*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*83*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
2-Fluorobiphenyl	*69*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
2-Fluorophenol	*56*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Nitrobenzene-d5	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Phenol-d5	*57*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Terphenyl-d14	*79*		*10 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**78**		1.0	0.21	mg/L			12/20/14 23:48	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**6.0**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 14:04	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2300**		50	18	ug/L		12/09/14 15:47	12/10/14 15:15	10
p-Phenolsulfonic acid	**210**		50	8.4	ug/L		12/09/14 15:47	12/10/14 15:15	10
Benzenesulfonic acid	**13**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 15:15	10
Resorcinol	**170**		50	5.9	ug/L		12/09/14 15:47	12/10/14 15:15	10

Client Sample ID: SG-5 — **Lab Sample ID: 180-39575-9**
Date Collected: 12/03/14 12:35 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 15:15	10

Client Sample ID: SG-4 — **Lab Sample ID: 180-39575-10**
Date Collected: 12/04/14 09:55 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/15/14 13:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/15/14 13:43	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/15/14 13:43	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/15/14 13:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/15/14 13:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/15/14 13:43	1
1,2-Dichlorobenzene	**1.1**		1.0	0.15	ug/L			12/15/14 13:43	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/15/14 13:43	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/15/14 13:43	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/15/14 13:43	1
1,4-Dichlorobenzene	**0.25**	**J**	1.0	0.21	ug/L			12/15/14 13:43	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/15/14 13:43	1
2-Hexanone	ND		5.0	0.16	ug/L			12/15/14 13:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/15/14 13:43	1
Acetone	ND		5.0	2.5	ug/L			12/15/14 13:43	1
Benzene	ND		1.0	0.11	ug/L			12/15/14 13:43	1
Bromoform	ND		1.0	0.19	ug/L			12/15/14 13:43	1
Bromomethane	ND		1.0	0.31	ug/L			12/15/14 13:43	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/15/14 13:43	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Chlorobenzene	**0.75**	**J**	1.0	0.14	ug/L			12/15/14 13:43	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Chloroethane	ND		1.0	0.21	ug/L			12/15/14 13:43	1
Chloroform	ND		1.0	0.17	ug/L			12/15/14 13:43	1
Chloromethane	ND		1.0	0.28	ug/L			12/15/14 13:43	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/15/14 13:43	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/15/14 13:43	1
Cyclohexane	ND		1.0	0.25	ug/L			12/15/14 13:43	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/15/14 13:43	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/15/14 13:43	1
Ethyl ether	**1.1**		1.0	0.082	ug/L			12/15/14 13:43	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/15/14 13:43	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/15/14 13:43	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/15/14 13:43	1
Methyl acetate	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/15/14 13:43	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/15/14 13:43	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/15/14 13:43	1
Styrene	ND		1.0	0.097	ug/L			12/15/14 13:43	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/15/14 13:43	1

Client Sample ID: SG-4

Lab Sample ID: 180-39575-10

Date Collected: 12/04/14 09:55

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.15	ug/L			12/15/14 13:43	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/15/14 13:43	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/15/14 13:43	1
Trichloroethene	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/15/14 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*64 - 135*		*12/15/14 13:43*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/15/14 13:43*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 128*		*12/15/14 13:43*	*1*
Toluene-d8 (Surr)	*104*		*71 - 118*		*12/15/14 13:43*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*82*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
2-Fluorobiphenyl	*74*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
2-Fluorophenol	*55*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Nitrobenzene-d5	*72*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Phenol-d5	*57*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Terphenyl-d14	*61*		*10 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**79**		1.0	0.21	mg/L			12/22/14 13:28	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**8.5**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 14:16	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2700**		50	18	ug/L		12/09/14 15:47	12/10/14 15:38	10
p-Phenolsulfonic acid	**220**		50	8.4	ug/L		12/09/14 15:47	12/10/14 15:38	10
Benzenesulfonic acid	**23**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 15:38	10
Resorcinol	**420**		50	5.9	ug/L		12/09/14 15:47	12/10/14 15:38	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 15:38	10

Client Sample ID: SG-3

Lab Sample ID: 180-39575-11

Date Collected: 12/04/14 10:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:33	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SG-3
Date Collected: 12/04/14 10:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-11
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:33	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:33	1
1,2-Dichlorobenzene	**1.5**		1.0	0.15	ug/L			12/16/14 17:33	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:33	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:33	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:33	1
1,4-Dichlorobenzene	**0.27**	**J**	1.0	0.21	ug/L			12/16/14 17:33	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:33	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:33	1
Acetone	**3.2**	**J**	5.0	2.5	ug/L			12/16/14 17:33	1
Benzene	**0.11**	**J**	1.0	0.11	ug/L			12/16/14 17:33	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:33	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:33	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Chlorobenzene	**0.98**	**J**	1.0	0.14	ug/L			12/16/14 17:33	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:33	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:33	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:33	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:33	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:33	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:33	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Ethyl ether	**1.6**		1.0	0.082	ug/L			12/16/14 17:33	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:33	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:33	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:33	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:33	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:33	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:33	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:33	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:33	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*64 - 135*		*12/16/14 17:33*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:33*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*12/16/14 17:33*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 17:33*	*1*

Client Sample ID: SG-3

Lab Sample ID: 180-39575-11

Date Collected: 12/04/14 10:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*87*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
2-Fluorobiphenyl	*72*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
2-Fluorophenol	*64*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Nitrobenzene-d5	*70*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Phenol-d5	*67*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Terphenyl-d14	*62*		*10 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**82**		1.0	0.21	mg/L			12/21/14 00:23	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**8.7**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 14:52	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**3100**		50	18	ug/L		12/09/14 15:47	12/10/14 16:21	10
p-Phenolsulfonic acid	**160**		50	8.4	ug/L		12/09/14 15:47	12/10/14 16:21	10
Benzenesulfonic acid	**27**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 16:21	10
Resorcinol	**440**		50	5.9	ug/L		12/09/14 15:47	12/10/14 16:21	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 16:21	10

Client Sample ID: DUP120414

Lab Sample ID: 180-39575-12

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:57	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:57	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:57	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:57	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:57	1
1,2-Dichlorobenzene	**1.4**		1.0	0.15	ug/L			12/16/14 17:57	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:57	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:57	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:57	1
1,4-Dichlorobenzene	**0.29**	**J**	1.0	0.21	ug/L			12/16/14 17:57	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:57	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:57	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:57	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:57	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:57	1

Client Sample ID: DUP120414
Date Collected: 12/04/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-12
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:57	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:57	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Chlorobenzene	**0.97**	**J**	1.0	0.14	ug/L			12/16/14 17:57	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:57	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:57	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:57	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:57	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:57	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:57	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:57	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:57	1
Ethyl ether	**1.6**		1.0	0.082	ug/L			12/16/14 17:57	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:57	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:57	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:57	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:57	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:57	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:57	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:57	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:57	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 135*		*12/16/14 17:57*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:57*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*12/16/14 17:57*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 17:57*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*102*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
2-Fluorobiphenyl	*79*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
2-Fluorophenol	*65*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Nitrobenzene-d5	*75*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Phenol-d5	*65*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Terphenyl-d14	*80*		*10 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*

Client Sample ID: DUP120414

Lab Sample ID: 180-39575-12

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**80**		1.0	0.21	mg/L			12/21/14 00:57	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**9.1**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 15:15	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2600**		50	18	ug/L		12/09/14 15:47	12/10/14 16:43	10
p-Phenolsulfonic acid	**160**		50	8.4	ug/L		12/09/14 15:47	12/10/14 16:43	10
Benzenesulfonic acid	**20**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 16:43	10
Resorcinol	**430**		50	5.9	ug/L		12/09/14 15:47	12/10/14 16:43	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 16:43	10

Client Sample ID: SG-8

Lab Sample ID: 180-39575-13

Date Collected: 12/04/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 18:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 18:45	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 18:45	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 18:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 18:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 18:45	1
1,2-Dichlorobenzene	**1.0**		1.0	0.15	ug/L			12/16/14 18:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 18:45	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 18:45	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 18:45	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 18:45	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 18:45	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 18:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 18:45	1
Acetone	**3.1**	**J**	5.0	2.5	ug/L			12/16/14 18:45	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 18:45	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 18:45	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 18:45	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Chlorobenzene	**0.65**	**J**	1.0	0.14	ug/L			12/16/14 18:45	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 18:45	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 18:45	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 18:45	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 18:45	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 18:45	1

Client Sample ID: SG-8
Date Collected: 12/04/14 10:45
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-13
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 18:45	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Ethyl ether	**0.49**	**J**	1.0	0.082	ug/L			12/16/14 18:45	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 18:45	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 18:45	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 18:45	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 18:45	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 18:45	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 18:45	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 18:45	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 18:45	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 18:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*64 - 135*		*12/16/14 18:45*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 118*		*12/16/14 18:45*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 18:45*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 18:45*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**0.50**	**J**	0.93	0.051	ug/L		12/10/14 08:24	12/11/14 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*97*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
2-Fluorobiphenyl	*78*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
2-Fluorophenol	*68*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Nitrobenzene-d5	*74*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Phenol-d5	*71*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Terphenyl-d14	*68*		*10 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**77**		1.0	0.21	mg/L			12/21/14 01:32	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**7.0**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 15:27	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**190**		50	18	ug/L		12/09/14 15:47	12/10/14 17:17	10
p-Phenolsulfonic acid	**94**		50	8.4	ug/L		12/09/14 15:47	12/10/14 17:17	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 17:17	10
Resorcinol	**540**		50	5.9	ug/L		12/09/14 15:47	12/10/14 17:17	10

Client Sample ID: SG-8 — **Lab Sample ID: 180-39575-13**
Date Collected: 12/04/14 10:45 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 17:17	10

Client Sample ID: SW-1 — **Lab Sample ID: 180-39575-14**
Date Collected: 12/04/14 10:55 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 19:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 19:09	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 19:09	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 19:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 19:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 19:09	1
1,2-Dichlorobenzene	**0.70**	**J**	1.0	0.15	ug/L			12/16/14 19:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 19:09	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 19:09	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 19:09	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 19:09	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 19:09	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 19:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 19:09	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 19:09	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 19:09	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 19:09	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 19:09	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Chlorobenzene	**0.32**	**J**	1.0	0.14	ug/L			12/16/14 19:09	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 19:09	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 19:09	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 19:09	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 19:09	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 19:09	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 19:09	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Ethyl ether	**0.26**	**J**	1.0	0.082	ug/L			12/16/14 19:09	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 19:09	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 19:09	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 19:09	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 19:09	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 19:09	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 19:09	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 19:09	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 19:09	1

Client Sample ID: SW-1

Lab Sample ID: 180-39575-14

Date Collected: 12/04/14 10:55

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.15	ug/L			12/16/14 19:09	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 19:09	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 19:09	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*12/16/14 19:09*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 19:09*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 19:09*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 19:09*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*102*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
2-Fluorobiphenyl	*90*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
2-Fluorophenol	*79*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Nitrobenzene-d5	*88*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Phenol-d5	*80*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Terphenyl-d14	*79*		*10 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/21/14 02:07	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**8.6**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 15:39	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**88**		50	18	ug/L		12/09/14 15:47	12/10/14 17:38	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 17:38	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 17:38	10
Resorcinol	**450**		50	5.9	ug/L		12/09/14 15:47	12/10/14 17:38	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 17:38	10

Client Sample ID: SG-2

Lab Sample ID: 180-39575-15

Date Collected: 12/04/14 11:15

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 19:34	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 19:34	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SG-2
Date Collected: 12/04/14 11:15
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-15
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 19:34	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 19:34	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 19:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 19:34	1
1,2-Dichlorobenzene	**0.69**	**J**	1.0	0.15	ug/L			12/16/14 19:34	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 19:34	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 19:34	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 19:34	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 19:34	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 19:34	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 19:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 19:34	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 19:34	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 19:34	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 19:34	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 19:34	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Chlorobenzene	**0.18**	**J**	1.0	0.14	ug/L			12/16/14 19:34	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 19:34	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 19:34	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 19:34	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 19:34	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 19:34	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 19:34	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Ethyl ether	**0.17**	**J**	1.0	0.082	ug/L			12/16/14 19:34	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 19:34	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 19:34	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 19:34	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 19:34	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 19:34	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 19:34	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 19:34	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 19:34	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 135*		*12/16/14 19:34*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/16/14 19:34*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 128*		*12/16/14 19:34*	*1*
Toluene-d8 (Surr)	*93*		*71 - 118*		*12/16/14 19:34*	*1*

Client Sample ID: SG-2

Lab Sample ID: 180-39575-15

Date Collected: 12/04/14 11:15

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*86*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
2-Fluorobiphenyl	*83*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
2-Fluorophenol	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Nitrobenzene-d5	*69*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Phenol-d5	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Terphenyl-d14	*59*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:05	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**11**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 15:51	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**88**		50	18	ug/L		12/09/14 15:47	12/10/14 18:00	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:00	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:00	10
Resorcinol	**390**		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:00	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:00	10

Client Sample ID: SH-1

Lab Sample ID: 180-39575-16

Date Collected: 12/04/14 11:30

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 15:48	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 15:48	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 15:48	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 15:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 15:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 15:48	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 15:48	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 15:48	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 15:48	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 15:48	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 15:48	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 15:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 15:48	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 15:48	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 15:48	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 15:48	1

Client Sample ID: SH-1
Date Collected: 12/04/14 11:30
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-16
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 15:48	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 15:48	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 15:48	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 15:48	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 15:48	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 15:48	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 15:48	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 15:48	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 15:48	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 15:48	1
Ethyl ether	**0.10**	**J**	1.0	0.082	ug/L			12/16/14 15:48	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 15:48	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 15:48	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 15:48	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 15:48	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 15:48	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 15:48	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 15:48	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 15:48	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 15:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 118*		*12/16/14 15:48*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 15:48*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/16/14 15:48*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*89*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
2-Fluorobiphenyl	*80*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
2-Fluorophenol	*63*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Nitrobenzene-d5	*74*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Phenol-d5	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Terphenyl-d14	*61*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*

Client Sample ID: SH-1

Lab Sample ID: 180-39575-16

Date Collected: 12/04/14 11:30

Matrix: Water

Date Received: 12/05/14 18:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:22	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**11**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:02	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**90**		50	18	ug/L		12/09/14 15:47	12/10/14 18:33	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:33	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:33	10
Resorcinol	**350**		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:33	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:33	10

Client Sample ID: SG-1

Lab Sample ID: 180-39575-17

Date Collected: 12/04/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:12	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:12	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:12	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:12	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:12	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:12	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:12	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:12	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:12	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 16:12	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:12	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:12	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:12	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:12	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:12	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:12	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:12	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:12	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:12	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:12	1

Client Sample ID: SG-1
Date Collected: 12/04/14 11:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-17
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:12	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:12	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 16:12	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:12	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:12	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:12	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:12	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:12	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:12	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:12	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:12	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 16:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 118*		*12/16/14 16:12*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 16:12*	*1*
Toluene-d8 (Surr)	*102*		*71 - 118*		*12/16/14 16:12*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*80*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
2-Fluorobiphenyl	*73*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
2-Fluorophenol	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Nitrobenzene-d5	*72*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Phenol-d5	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Terphenyl-d14	*51*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:39	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**12**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:14	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 18:55	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:55	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:55	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:55	10

Client Sample ID: SG-1 — **Lab Sample ID: 180-39575-17**
Date Collected: 12/04/14 11:40 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:55	10

Client Sample ID: SG-6 — **Lab Sample ID: 180-39575-18**
Date Collected: 12/04/14 13:00 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:36	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:36	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:36	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:36	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:36	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:36	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:36	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:36	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:36	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 16:36	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:36	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:36	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:36	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:36	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:36	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:36	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:36	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:36	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:36	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:36	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:36	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:36	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 16:36	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:36	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:36	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:36	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:36	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:36	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:36	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:36	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:36	1

Client Sample ID: SG-6

Lab Sample ID: 180-39575-18

Date Collected: 12/04/14 13:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:36	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 16:36*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 118*		*12/16/14 16:36*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 16:36*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 16:36*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*66*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
2-Fluorobiphenyl	*56*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
2-Fluorophenol	*50*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Nitrobenzene-d5	*55*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Phenol-d5	*49*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Terphenyl-d14	*44*		*10 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 15:57	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**12**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:26	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 19:17	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 19:17	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 19:17	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 19:17	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 19:17	10

Client Sample ID: SW-2_LANGAN

Lab Sample ID: 180-39575-19

Date Collected: 12/04/14 13:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:00	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SW-2_LANGAN
Date Collected: 12/04/14 13:10
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-19
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:00	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:00	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:00	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:00	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:00	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 17:00	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:00	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:00	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:00	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:00	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:00	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:00	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:00	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:00	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:00	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:00	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:00	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:00	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:00	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:00	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:00	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 17:00	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:00	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:00	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:00	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:00	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:00	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:00	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:00	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:00	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*64 - 135*		*12/16/14 17:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 118*		*12/16/14 17:00*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 17:00*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 17:00*	*1*

Client Sample ID: SW-2_LANGAN

Lab Sample ID: 180-39575-19

Date Collected: 12/04/14 13:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*74*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
2-Fluorobiphenyl	*64*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
2-Fluorophenol	*52*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Nitrobenzene-d5	*59*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Phenol-d5	*54*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Terphenyl-d14	*68*		*10 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 16:49	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**14**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:38	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**86**		50	18	ug/L		12/09/14 15:47	12/10/14 19:50	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 19:50	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 19:50	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 19:50	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 19:50	10

Client Sample ID: SW-1_LANGAN

Lab Sample ID: 180-39575-20

Date Collected: 12/04/14 13:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:24	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:24	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:24	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:24	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:24	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:24	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 17:24	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:24	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:24	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:24	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:24	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:24	1

Client Sample ID: SW-1_LANGAN
Date Collected: 12/04/14 13:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-20
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:24	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:24	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:24	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:24	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:24	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:24	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:24	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:24	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:24	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:24	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 17:24	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:24	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:24	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:24	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:24	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:24	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:24	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:24	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:24	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*64 - 135*		*12/16/14 17:24*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:24*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 128*		*12/16/14 17:24*	*1*
Toluene-d8 (Surr)	*105*		*71 - 118*		*12/16/14 17:24*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 22:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*96*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
2-Fluorobiphenyl	*89*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
2-Fluorophenol	*67*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Nitrobenzene-d5	*78*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Phenol-d5	*70*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Terphenyl-d14	*81*		*10 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*

Client Sample ID: SW-1_LANGAN

Lab Sample ID: 180-39575-20

Date Collected: 12/04/14 13:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 17:06	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**13**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:50	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 20:12	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 20:12	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 20:12	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 20:12	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 20:12	10

Client Sample ID: FB120414

Lab Sample ID: 180-39575-21

Date Collected: 12/04/14 14:40

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 13:08	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 13:08	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 13:08	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 13:08	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 13:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 13:08	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 13:08	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 13:08	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 13:08	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 13:08	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 13:08	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 13:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 13:08	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 13:08	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 13:08	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 13:08	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 13:08	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 13:08	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 13:08	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 13:08	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 13:08	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 13:08	1

Client Sample ID: FB120414
Date Collected: 12/04/14 14:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-21
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 13:08	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 13:08	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 13:08	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 13:08	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 13:08	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 13:08	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 13:08	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 13:08	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 13:08	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 13:08	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 13:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 135*		*12/16/14 13:08*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 118*		*12/16/14 13:08*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 13:08*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/16/14 13:08*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.96	0.053	ug/L		12/10/14 08:26	12/11/14 22:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
2-Fluorobiphenyl	*49*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
2-Fluorophenol	*40*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Nitrobenzene-d5	*48*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Phenol-d5	*41*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Terphenyl-d14	*66*		*10 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			12/22/14 17:23	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**5.0**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 17:01	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		50	18	ug/L		12/09/14 15:47	12/10/14 20:34	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 20:34	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 20:34	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 20:34	10

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: FB120414 — **Lab Sample ID: 180-39575-21**
Date Collected: 12/04/14 14:40 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 20:34	10

Client Sample ID: TRIP BLANK — **Lab Sample ID: 180-39575-22**
Date Collected: 12/04/14 00:00 — **Matrix: Water**
Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/15/14 14:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/15/14 14:07	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/15/14 14:07	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/15/14 14:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/15/14 14:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/15/14 14:07	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/15/14 14:07	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/15/14 14:07	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/15/14 14:07	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/15/14 14:07	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/15/14 14:07	1
2-Hexanone	ND		5.0	0.16	ug/L			12/15/14 14:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/15/14 14:07	1
Acetone	ND		5.0	2.5	ug/L			12/15/14 14:07	1
Benzene	ND		1.0	0.11	ug/L			12/15/14 14:07	1
Bromoform	ND		1.0	0.19	ug/L			12/15/14 14:07	1
Bromomethane	ND		1.0	0.31	ug/L			12/15/14 14:07	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/15/14 14:07	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chloroethane	ND		1.0	0.21	ug/L			12/15/14 14:07	1
Chloroform	ND		1.0	0.17	ug/L			12/15/14 14:07	1
Chloromethane	**0.39**	**J**	1.0	0.28	ug/L			12/15/14 14:07	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/15/14 14:07	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/15/14 14:07	1
Cyclohexane	ND		1.0	0.25	ug/L			12/15/14 14:07	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/15/14 14:07	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/15/14 14:07	1
Ethyl ether	ND		1.0	0.082	ug/L			12/15/14 14:07	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/15/14 14:07	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/15/14 14:07	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/15/14 14:07	1
Methyl acetate	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/15/14 14:07	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/15/14 14:07	1
Methylene Chloride	**0.63**	**J**	1.0	0.13	ug/L			12/15/14 14:07	1
Styrene	ND		1.0	0.097	ug/L			12/15/14 14:07	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/15/14 14:07	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: TRIP BLANK
Date Collected: 12/04/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-22
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/15/14 14:07	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
Trichloroethene	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/15/14 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*64 - 135*		*12/15/14 14:07*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/15/14 14:07*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 128*		*12/15/14 14:07*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/15/14 14:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-127772/1-A
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127772

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.0	0.49	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.72	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0	1.1	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,1,2-Trichloroethane	ND		5.0	0.83	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,1-Dichloroethane	ND		5.0	0.58	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,1-Dichloroethene	ND		5.0	0.85	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2,4-Trichlorobenzene	ND		5.0	0.88	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.75	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2-Dichlorobenzene	ND		5.0	0.80	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2-Dichloroethane	ND		5.0	0.61	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2-Dichloropropane	ND		5.0	0.54	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,3-Dichlorobenzene	ND		5.0	0.66	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,4-Dichlorobenzene	ND		5.0	0.64	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
2-Butanone (MEK)	ND		5.0	0.88	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
2-Hexanone	ND		5.0	0.69	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.65	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Acetone	ND		20	5.0	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Benzene	ND		5.0	0.68	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Bromoform	ND		5.0	0.44	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Bromomethane	ND		5.0	0.74	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Carbon disulfide	ND		5.0	0.51	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Carbon tetrachloride	ND		5.0	0.45	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Chlorobenzene	ND		5.0	0.76	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Chlorodibromomethane	ND		5.0	0.71	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Chloroethane	ND		5.0	1.5	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Chloroform	ND		5.0	0.58	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Chloromethane	ND		5.0	0.85	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
cis-1,2-Dichloroethene	ND		5.0	0.70	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
cis-1,3-Dichloropropene	ND		5.0	0.68	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Cyclohexane	ND		5.0	0.37	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Dichlorobromomethane	ND		5.0	0.56	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Dichlorodifluoromethane	ND		5.0	0.67	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Ethyl ether	ND		5.0	0.59	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Ethylbenzene	ND		5.0	0.64	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
1,2-Dibromoethane	ND		5.0	0.86	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Isopropylbenzene	ND		5.0	0.68	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Methyl acetate	ND		5.0	0.90	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Methyl tert-butyl ether	ND		5.0	0.75	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Methylcyclohexane	ND		5.0	0.73	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Methylene Chloride	8.87		5.0	0.67	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Styrene	ND		5.0	0.71	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Tetrachloroethene	ND		5.0	0.68	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Toluene	ND		5.0	0.73	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
trans-1,2-Dichloroethene	ND		5.0	0.60	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
trans-1,3-Dichloropropene	ND		5.0	0.60	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Trichloroethene	ND		5.0	0.66	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Trichlorofluoromethane	ND		5.0	0.92	ug/Kg		12/10/14 05:05	12/10/14 06:45	1
Vinyl chloride	ND		5.0	0.47	ug/Kg		12/10/14 05:05	12/10/14 06:45	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-127772/1-A
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127772

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		52 - 124	12/10/14 05:05	12/10/14 06:45	1
4-Bromofluorobenzene (Surr)	86		63 - 120	12/10/14 05:05	12/10/14 06:45	1
Dibromofluoromethane (Surr)	88		68 - 121	12/10/14 05:05	12/10/14 06:45	1
Toluene-d8 (Surr)	94		72 - 127	12/10/14 05:05	12/10/14 06:45	1

Lab Sample ID: LCS 180-127772/2-A
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	40.0	40.2		ug/Kg		100	67 - 126
1,1,2,2-Tetrachloroethane	40.0	25.2		ug/Kg		63	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	40.0	42.3		ug/Kg		106	55 - 130
1,1,2-Trichloroethane	40.0	31.8		ug/Kg		80	70 - 128
1,1-Dichloroethane	40.0	39.6		ug/Kg		99	66 - 124
1,1-Dichloroethene	40.0	37.9		ug/Kg		95	59 - 129
1,2,4-Trichlorobenzene	40.0	39.4		ug/Kg		99	51 - 136
1,2-Dibromo-3-Chloropropane	40.0	18.5		ug/Kg		46	35 - 136
1,2-Dichlorobenzene	40.0	39.9		ug/Kg		100	71 - 124
1,2-Dichloroethane	40.0	35.7		ug/Kg		89	61 - 127
1,2-Dichloropropane	40.0	38.5		ug/Kg		96	72 - 122
1,3-Dichlorobenzene	40.0	40.8		ug/Kg		102	75 - 118
1,4-Dichlorobenzene	40.0	38.8		ug/Kg		97	77 - 116
2-Butanone (MEK)	40.0	26.5		ug/Kg		66	35 - 149
2-Hexanone	40.0	24.4		ug/Kg		61	32 - 150
4-Methyl-2-pentanone (MIBK)	40.0	24.6		ug/Kg		62	44 - 148
Acetone	40.0	26.2		ug/Kg		66	20 - 150
Benzene	40.0	38.8		ug/Kg		97	77 - 120
Bromoform	40.0	23.8		ug/Kg		60	53 - 140
Bromomethane	40.0	41.7		ug/Kg		104	25 - 150
Carbon disulfide	40.0	39.8		ug/Kg		100	50 - 127
Carbon tetrachloride	40.0	36.3		ug/Kg		91	69 - 122
Chlorobenzene	40.0	38.9		ug/Kg		97	79 - 120
Chlorodibromomethane	40.0	29.3		ug/Kg		73	70 - 132
Chloroethane	40.0	41.9		ug/Kg		105	22 - 150
Chloroform	40.0	39.5		ug/Kg		99	72 - 120
Chloromethane	40.0	41.4		ug/Kg		103	44 - 131
cis-1,2-Dichloroethene	40.0	38.0		ug/Kg		95	80 - 118
cis-1,3-Dichloropropene	40.0	33.5		ug/Kg		84	73 - 120
Cyclohexane	40.0	39.6		ug/Kg		99	64 - 130
Dichlorobromomethane	40.0	35.0		ug/Kg		88	70 - 125
Dichlorodifluoromethane	40.0	35.0		ug/Kg		88	25 - 150
Ethylbenzene	40.0	39.8		ug/Kg		100	78 - 125
1,2-Dibromoethane	40.0	30.4		ug/Kg		76	70 - 131
Isopropylbenzene	40.0	40.6		ug/Kg		102	70 - 133
Methyl tert-butyl ether	40.0	29.6		ug/Kg		74	48 - 132
Methylcyclohexane	40.0	40.8		ug/Kg		102	66 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-127772/2-A
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	40.0	46.7		ug/Kg		117	58 - 127
Styrene	40.0	38.0		ug/Kg		95	83 - 129
Tetrachloroethene	40.0	41.2		ug/Kg		103	78 - 129
Toluene	40.0	38.8		ug/Kg		97	78 - 124
trans-1,2-Dichloroethene	40.0	40.0		ug/Kg		100	77 - 121
trans-1,3-Dichloropropene	40.0	29.4	*	ug/Kg		73	74 - 129
Trichloroethene	40.0	40.3		ug/Kg		101	76 - 119
Trichlorofluoromethane	40.0	55.2		ug/Kg		138	20 - 150
Vinyl chloride	40.0	42.7		ug/Kg		107	63 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*52 - 124*
4-Bromofluorobenzene (Surr)	*84*		*63 - 120*
Dibromofluoromethane (Surr)	*89*		*68 - 121*
Toluene-d8 (Surr)	*92*		*72 - 127*

Lab Sample ID: 180-39575-4 MS
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 127772

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		54.6	57.6		ug/Kg	☼	105	67 - 126
1,1,2,2-Tetrachloroethane	ND		54.6	27.6	F1	ug/Kg	☼	51	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		54.6	56.1		ug/Kg	☼	103	55 - 130
1,1,2-Trichloroethane	ND		54.6	130	F1	ug/Kg	☼	238	70 - 128
1,1-Dichloroethane	ND		54.6	57.4		ug/Kg	☼	105	66 - 124
1,1-Dichloroethene	ND		54.6	58.3		ug/Kg	☼	107	59 - 129
1,2,4-Trichlorobenzene	ND		54.6	24.4	F1	ug/Kg	☼	45	51 - 136
1,2-Dibromo-3-Chloropropane	ND		54.6	29.6		ug/Kg	☼	54	35 - 136
1,2-Dichlorobenzene	3.0	J	54.6	55.6		ug/Kg	☼	96	71 - 124
1,2-Dichloroethane	ND		54.6	44.6		ug/Kg	☼	82	61 - 127
1,2-Dichloropropane	ND		54.6	47.6		ug/Kg	☼	87	72 - 122
1,3-Dichlorobenzene	ND		54.6	53.7		ug/Kg	☼	98	75 - 118
1,4-Dichlorobenzene	ND		54.6	53.6		ug/Kg	☼	98	77 - 116
2-Butanone (MEK)	ND		54.6	25.0		ug/Kg	☼	46	35 - 149
2-Hexanone	ND		54.6	160	F1	ug/Kg	☼	294	32 - 150
4-Methyl-2-pentanone (MIBK)	ND		54.6	26.6		ug/Kg	☼	49	44 - 148
Acetone	ND		54.6	30.5		ug/Kg	☼	56	20 - 150
Benzene	17		54.6	84.4	F1	ug/Kg	☼	123	77 - 120
Bromoform	ND		54.6	27.3	F1	ug/Kg	☼	50	53 - 140
Bromomethane	ND		54.6	66.6		ug/Kg	☼	122	25 - 150
Carbon disulfide	ND		54.6	63.2		ug/Kg	☼	116	50 - 127
Carbon tetrachloride	ND		54.6	49.6		ug/Kg	☼	91	69 - 122
Chlorobenzene	2.3	J	54.6	57.1		ug/Kg	☼	100	79 - 120
Chlorodibromomethane	ND		54.6	40.5		ug/Kg	☼	74	70 - 132
Chloroethane	ND		54.6	83.5	F1	ug/Kg	☼	153	22 - 150
Chloroform	ND		54.6	55.0		ug/Kg	☼	101	72 - 120

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 127750 — **Prep Batch: 127772**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloromethane	ND		54.6	70.5		ug/Kg	☼	129	44 - 131
cis-1,2-Dichloroethene	ND		54.6	56.4		ug/Kg	☼	103	80 - 118
cis-1,3-Dichloropropene	ND		54.6	41.4		ug/Kg	☼	76	73 - 120
Cyclohexane	11		54.6	79.5		ug/Kg	☼	125	64 - 130
Dichlorobromomethane	ND		54.6	43.9		ug/Kg	☼	81	70 - 125
Dichlorodifluoromethane	ND		54.6	54.8		ug/Kg	☼	100	25 - 150
Ethylbenzene	3.1	J	54.6	59.8		ug/Kg	☼	104	78 - 125
1,2-Dibromoethane	ND		54.6	39.0		ug/Kg	☼	72	70 - 131
Isopropylbenzene	2.0	J	54.6	54.2		ug/Kg	☼	96	70 - 133
Methyl tert-butyl ether	ND		54.6	35.3		ug/Kg	☼	65	48 - 132
Methylcyclohexane	48		54.6	163	F1	ug/Kg	☼	210	66 - 135
Methylene Chloride	4.6	J B	54.6	51.9		ug/Kg	☼	87	58 - 127
Styrene	ND		54.6	46.9		ug/Kg	☼	86	83 - 129
Tetrachloroethene	ND		54.6	59.8		ug/Kg	☼	110	78 - 129
Toluene	ND		54.6	60.4		ug/Kg	☼	111	78 - 124
trans-1,2-Dichloroethene	ND		54.6	61.2		ug/Kg	☼	112	77 - 121
trans-1,3-Dichloropropene	ND	*	54.6	40.6		ug/Kg	☼	74	74 - 129
Trichloroethene	ND		54.6	53.5		ug/Kg	☼	98	76 - 119
Trichlorofluoromethane	ND		54.6	86.5	F1	ug/Kg	☼	159	20 - 150
Vinyl chloride	ND		54.6	71.2	F1	ug/Kg	☼	131	63 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*52 - 124*
4-Bromofluorobenzene (Surr)	*84*		*63 - 120*
Dibromofluoromethane (Surr)	*91*		*68 - 121*
Toluene-d8 (Surr)	*113*		*72 - 127*

Lab Sample ID: 180-39575-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 127750 — **Prep Batch: 127772**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		54.6	57.5		ug/Kg	☼	105	67 - 126	0	31
1,1,2,2-Tetrachloroethane	ND		54.6	28.9	F1	ug/Kg	☼	53	60 - 139	5	24
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		54.6	56.1		ug/Kg	☼	103	55 - 130	0	37
1,1,2-Trichloroethane	ND		54.6	152	F1	ug/Kg	☼	279	70 - 128	16	22
1,1-Dichloroethane	ND		54.6	58.0		ug/Kg	☼	106	66 - 124	1	23
1,1-Dichloroethene	ND		54.6	61.3		ug/Kg	☼	112	59 - 129	5	25
1,2,4-Trichlorobenzene	ND		54.6	28.6		ug/Kg	☼	52	51 - 136	16	40
1,2-Dibromo-3-Chloropropane	ND		54.6	27.8		ug/Kg	☼	51	35 - 136	6	40
1,2-Dichlorobenzene	3.0	J	54.6	57.3		ug/Kg	☼	99	71 - 124	3	22
1,2-Dichloroethane	ND		54.6	46.3		ug/Kg	☼	85	61 - 127	4	23
1,2-Dichloropropane	ND		54.6	48.4		ug/Kg	☼	89	72 - 122	2	20
1,3-Dichlorobenzene	ND		54.6	55.4		ug/Kg	☼	102	75 - 118	3	20
1,4-Dichlorobenzene	ND		54.6	55.2		ug/Kg	☼	101	77 - 116	3	20
2-Butanone (MEK)	ND		54.6	28.8		ug/Kg	☼	53	35 - 149	14	36
2-Hexanone	ND		54.6	186	F1	ug/Kg	☼	341	32 - 150	15	32

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-4 MSD
Matrix: Solid
Analysis Batch: 127750

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 127772

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
4-Methyl-2-pentanone (MIBK)	ND		54.6	31.9		ug/Kg	☼	59	44 - 148	18	30
Acetone	ND		54.6	32.4		ug/Kg	☼	59	20 - 150	6	40
Benzene	17		54.6	92.0	F1	ug/Kg	☼	137	77 - 120	9	20
Bromoform	ND		54.6	29.3		ug/Kg	☼	54	53 - 140	7	23
Bromomethane	ND		54.6	67.5		ug/Kg	☼	124	25 - 150	1	40
Carbon disulfide	ND		54.6	62.8		ug/Kg	☼	115	50 - 127	1	23
Carbon tetrachloride	ND		54.6	49.9		ug/Kg	☼	91	69 - 122	1	22
Chlorobenzene	2.3	J	54.6	59.2		ug/Kg	☼	104	79 - 120	4	20
Chlorodibromomethane	ND		54.6	42.0		ug/Kg	☼	77	70 - 132	4	20
Chloroethane	ND		54.6	57.7		ug/Kg	☼	106	22 - 150	37	40
Chloroform	ND		54.6	55.6		ug/Kg	☼	102	72 - 120	1	25
Chloromethane	ND		54.6	65.2		ug/Kg	☼	119	44 - 131	8	27
cis-1,2-Dichloroethene	ND		54.6	54.9		ug/Kg	☼	101	80 - 118	3	20
cis-1,3-Dichloropropene	ND		54.6	41.4		ug/Kg	☼	76	73 - 120	0	20
Cyclohexane	11		54.6	92.0	F1	ug/Kg	☼	149	64 - 130	15	21
Dichlorobromomethane	ND		54.6	45.5		ug/Kg	☼	83	70 - 125	3	21
Dichlorodifluoromethane	ND		54.6	56.4		ug/Kg	☼	103	25 - 150	3	34
Ethylbenzene	3.1	J	54.6	61.4		ug/Kg	☼	107	78 - 125	3	21
1,2-Dibromoethane	ND		54.6	40.4		ug/Kg	☼	74	70 - 131	4	20
Isopropylbenzene	2.0	J	54.6	56.2		ug/Kg	☼	99	70 - 133	4	22
Methyl tert-butyl ether	ND		54.6	36.6		ug/Kg	☼	67	48 - 132	4	36
Methylcyclohexane	48		54.6	201	F1	ug/Kg	☼	280	66 - 135	21	23
Methylene Chloride	4.6	J B	54.6	59.7		ug/Kg	☼	101	58 - 127	14	28
Styrene	ND		54.6	50.5		ug/Kg	☼	93	83 - 129	7	20
Tetrachloroethene	ND		54.6	62.5		ug/Kg	☼	115	78 - 129	4	20
Toluene	ND		54.6	60.6		ug/Kg	☼	111	78 - 124	0	21
trans-1,2-Dichloroethene	ND		54.6	60.6		ug/Kg	☼	111	77 - 121	1	20
trans-1,3-Dichloropropene	ND	*	54.6	43.5		ug/Kg	☼	80	74 - 129	7	20
Trichloroethene	ND		54.6	54.4		ug/Kg	☼	100	76 - 119	2	21
Trichlorofluoromethane	ND		54.6	87.0	F1	ug/Kg	☼	159	20 - 150	1	40
Vinyl chloride	ND		54.6	72.3	F1	ug/Kg	☼	132	63 - 124	1	27

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*74*		*52 - 124*
4-Bromofluorobenzene (Surr)	*87*		*63 - 120*
Dibromofluoromethane (Surr)	*89*		*68 - 121*
Toluene-d8 (Surr)	*116*		*72 - 127*

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 180-128326/7
Matrix: Water
Analysis Batch: 128326

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/15/14 13:06	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/15/14 13:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/15/14 13:06	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-128326/7
Matrix: Water
Analysis Batch: 128326

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/15/14 13:06	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/15/14 13:06	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/15/14 13:06	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/15/14 13:06	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/15/14 13:06	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/15/14 13:06	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/15/14 13:06	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/15/14 13:06	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/15/14 13:06	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/15/14 13:06	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/15/14 13:06	1
2-Hexanone	ND		5.0	0.16	ug/L			12/15/14 13:06	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/15/14 13:06	1
Acetone	ND		5.0	2.5	ug/L			12/15/14 13:06	1
Benzene	ND		1.0	0.11	ug/L			12/15/14 13:06	1
Bromoform	ND		1.0	0.19	ug/L			12/15/14 13:06	1
Bromomethane	ND		1.0	0.31	ug/L			12/15/14 13:06	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/15/14 13:06	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/15/14 13:06	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/15/14 13:06	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/15/14 13:06	1
Chloroethane	ND		1.0	0.21	ug/L			12/15/14 13:06	1
Chloroform	ND		1.0	0.17	ug/L			12/15/14 13:06	1
Chloromethane	ND		1.0	0.28	ug/L			12/15/14 13:06	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/15/14 13:06	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/15/14 13:06	1
Cyclohexane	ND		1.0	0.25	ug/L			12/15/14 13:06	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/15/14 13:06	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/15/14 13:06	1
Ethyl ether	ND		1.0	0.082	ug/L			12/15/14 13:06	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/15/14 13:06	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/15/14 13:06	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/15/14 13:06	1
Methyl acetate	ND		1.0	0.14	ug/L			12/15/14 13:06	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/15/14 13:06	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/15/14 13:06	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/15/14 13:06	1
Styrene	ND		1.0	0.097	ug/L			12/15/14 13:06	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/15/14 13:06	1
Toluene	ND		1.0	0.15	ug/L			12/15/14 13:06	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/15/14 13:06	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/15/14 13:06	1
Trichloroethene	ND		1.0	0.14	ug/L			12/15/14 13:06	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/15/14 13:06	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/15/14 13:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*12/15/14 13:06*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-128326/7
Matrix: Water
Analysis Batch: 128326

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		70 - 118		12/15/14 13:06	1
Dibromofluoromethane (Surr)	101		70 - 128		12/15/14 13:06	1
Toluene-d8 (Surr)	103		71 - 118		12/15/14 13:06	1

Lab Sample ID: LCS 180-128326/10
Matrix: Water
Analysis Batch: 128326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	8.60		ug/L		86	63 - 133
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	7.82		ug/L		78	46 - 148
1,1,2-Trichloroethane	10.0	9.98		ug/L		100	77 - 127
1,1-Dichloroethane	10.0	9.21		ug/L		92	73 - 126
1,1-Dichloroethene	10.0	9.00		ug/L		90	65 - 136
1,2,4-Trichlorobenzene	10.0	8.54		ug/L		85	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	9.95		ug/L		99	37 - 133
1,2-Dichlorobenzene	10.0	9.93		ug/L		99	77 - 120
1,2-Dichloroethane	10.0	9.37		ug/L		94	68 - 132
1,2-Dichloropropane	10.0	9.49		ug/L		95	76 - 124
1,3-Dichlorobenzene	10.0	9.72		ug/L		97	76 - 120
1,4-Dichlorobenzene	10.0	10.0		ug/L		100	77 - 120
2-Butanone (MEK)	20.0	24.9		ug/L		124	39 - 138
2-Hexanone	20.0	20.5		ug/L		103	25 - 132
4-Methyl-2-pentanone (MIBK)	20.0	20.7		ug/L		103	45 - 145
Acetone	20.0	22.4		ug/L		112	22 - 150
Benzene	10.0	9.14		ug/L		91	80 - 120
Bromoform	10.0	10.3		ug/L		103	46 - 150
Bromomethane	10.0	7.71		ug/L		77	33 - 150
Carbon disulfide	10.0	8.49		ug/L		85	54 - 132
Carbon tetrachloride	10.0	8.72		ug/L		87	55 - 150
Chlorobenzene	10.0	9.76		ug/L		98	80 - 120
Chlorodibromomethane	10.0	10.7		ug/L		107	60 - 140
Chloroethane	10.0	8.29		ug/L		83	36 - 142
Chloroform	10.0	9.08		ug/L		91	72 - 127
Chloromethane	10.0	12.3		ug/L		123	50 - 139
cis-1,2-Dichloroethene	10.0	9.61		ug/L		96	70 - 120
cis-1,3-Dichloropropene	10.0	9.60		ug/L		96	66 - 120
Cyclohexane	10.0	8.97		ug/L		90	45 - 142
Dichlorobromomethane	10.0	9.42		ug/L		94	66 - 130
Dichlorodifluoromethane	10.0	9.20		ug/L		92	13 - 150
Ethylbenzene	10.0	8.80		ug/L		88	72 - 126
1,2-Dibromoethane	10.0	10.4		ug/L		104	74 - 123
Isopropylbenzene	10.0	8.83		ug/L		88	58 - 130
Methyl tert-butyl ether	10.0	8.48		ug/L		85	64 - 123
Methylcyclohexane	10.0	8.26		ug/L		83	45 - 145
Methylene Chloride	10.0	8.58		ug/L		86	63 - 129

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-128326/10
Matrix: Water
Analysis Batch: 128326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Styrene	10.0	8.83		ug/L		88	71 - 127
Tetrachloroethene	10.0	9.01		ug/L		90	70 - 135
Toluene	10.0	8.63		ug/L		86	80 - 123
trans-1,2-Dichloroethene	10.0	9.72		ug/L		97	73 - 126
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	65 - 125
Trichloroethene	10.0	9.68		ug/L		97	73 - 120
Trichlorofluoromethane	10.0	9.09		ug/L		91	44 - 150
Vinyl chloride	10.0	10.7		ug/L		107	53 - 138

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*64 - 135*
4-Bromofluorobenzene (Surr)	*90*		*70 - 118*
Dibromofluoromethane (Surr)	*92*		*70 - 128*
Toluene-d8 (Surr)	*88*		*71 - 118*

Lab Sample ID: 180-39575-10 MS
Matrix: Water
Analysis Batch: 128326

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	8.68		ug/L		87	63 - 133
1,1,2,2-Tetrachloroethane	ND		10.0	10.4		ug/L		104	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.27		ug/L		83	46 - 148
1,1,2-Trichloroethane	ND		10.0	9.38		ug/L		94	77 - 127
1,1-Dichloroethane	ND		10.0	9.38		ug/L		94	73 - 126
1,1-Dichloroethene	ND		10.0	9.10		ug/L		91	65 - 136
1,2,4-Trichlorobenzene	ND		10.0	8.26		ug/L		83	60 - 127
1,2-Dibromo-3-Chloropropane	ND		10.0	10.8		ug/L		108	37 - 133
1,2-Dichlorobenzene	1.1		10.0	10.9		ug/L		98	77 - 120
1,2-Dichloroethane	ND		10.0	8.81		ug/L		88	68 - 132
1,2-Dichloropropane	ND		10.0	9.60		ug/L		96	76 - 124
1,3-Dichlorobenzene	ND		10.0	9.68		ug/L		97	76 - 120
1,4-Dichlorobenzene	0.25	J	10.0	9.81		ug/L		96	77 - 120
2-Butanone (MEK)	ND		20.0	25.9		ug/L		129	39 - 138
2-Hexanone	ND		20.0	23.6		ug/L		118	25 - 132
4-Methyl-2-pentanone (MIBK)	ND		20.0	21.6		ug/L		108	45 - 145
Acetone	ND		20.0	26.7		ug/L		134	22 - 150
Benzene	ND		10.0	9.11		ug/L		91	80 - 120
Bromoform	ND		10.0	10.3		ug/L		103	46 - 150
Bromomethane	ND		10.0	7.74		ug/L		77	33 - 150
Carbon disulfide	ND		10.0	8.40		ug/L		84	54 - 132
Carbon tetrachloride	ND		10.0	9.32		ug/L		93	55 - 150
Chlorobenzene	0.75	J	10.0	9.96		ug/L		92	80 - 120
Chlorodibromomethane	ND		10.0	9.79		ug/L		98	60 - 140
Chloroethane	ND		10.0	8.47		ug/L		85	36 - 142
Chloroform	ND		10.0	8.97		ug/L		90	72 - 127
Chloromethane	ND		10.0	11.3		ug/L		113	50 - 139

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-10 MS
Matrix: Water
Analysis Batch: 128326

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	ND		10.0	9.45		ug/L		94	70 - 120
cis-1,3-Dichloropropene	ND		10.0	9.29		ug/L		93	66 - 120
Cyclohexane	ND		10.0	9.45		ug/L		95	45 - 142
Dichlorobromomethane	ND		10.0	9.08		ug/L		91	66 - 130
Dichlorodifluoromethane	ND		10.0	9.16		ug/L		92	13 - 150
Ethylbenzene	ND		10.0	8.54		ug/L		85	72 - 126
1,2-Dibromoethane	ND		10.0	10.2		ug/L		102	74 - 123
Isopropylbenzene	ND		10.0	8.74		ug/L		87	58 - 130
Methyl tert-butyl ether	ND		10.0	8.56		ug/L		86	64 - 123
Methylcyclohexane	ND		10.0	8.51		ug/L		85	45 - 145
Methylene Chloride	ND		10.0	8.45		ug/L		85	63 - 129
Styrene	ND		10.0	8.50		ug/L		85	71 - 127
Tetrachloroethene	ND		10.0	9.31		ug/L		93	70 - 135
Toluene	ND		10.0	8.54		ug/L		85	80 - 123
trans-1,2-Dichloroethene	ND		10.0	9.51		ug/L		95	73 - 126
trans-1,3-Dichloropropene	ND		10.0	9.59		ug/L		96	65 - 125
Trichloroethene	ND		10.0	9.51		ug/L		95	73 - 120
Trichlorofluoromethane	ND		10.0	8.75		ug/L		87	44 - 150
Vinyl chloride	ND		10.0	10.6		ug/L		106	53 - 138

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*64 - 135*
4-Bromofluorobenzene (Surr)	*97*		*70 - 118*
Dibromofluoromethane (Surr)	*99*		*70 - 128*
Toluene-d8 (Surr)	*97*		*71 - 118*

Lab Sample ID: 180-39575-10 MSD
Matrix: Water
Analysis Batch: 128326

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		10.0	8.79		ug/L		88	63 - 133	1	35
1,1,2,2-Tetrachloroethane	ND		10.0	10.7		ug/L		107	62 - 125	2	35
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.61		ug/L		86	46 - 148	4	35
1,1,2-Trichloroethane	ND		10.0	9.63		ug/L		96	77 - 127	3	35
1,1-Dichloroethane	ND		10.0	9.34		ug/L		93	73 - 126	0	35
1,1-Dichloroethene	ND		10.0	9.22		ug/L		92	65 - 136	1	35
1,2,4-Trichlorobenzene	ND		10.0	8.88		ug/L		89	60 - 127	7	35
1,2-Dibromo-3-Chloropropane	ND		10.0	10.6		ug/L		106	37 - 133	2	35
1,2-Dichlorobenzene	1.1		10.0	11.3		ug/L		102	77 - 120	4	24
1,2-Dichloroethane	ND		10.0	9.38		ug/L		94	68 - 132	6	32
1,2-Dichloropropane	ND		10.0	9.60		ug/L		96	76 - 124	0	34
1,3-Dichlorobenzene	ND		10.0	9.91		ug/L		99	76 - 120	2	24
1,4-Dichlorobenzene	0.25	J	10.0	10.1		ug/L		99	77 - 120	3	24
2-Butanone (MEK)	ND		20.0	26.0		ug/L		130	39 - 138	1	35
2-Hexanone	ND		20.0	23.5		ug/L		118	25 - 132	0	35
4-Methyl-2-pentanone (MIBK)	ND		20.0	21.6		ug/L		108	45 - 145	0	35

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-10 MSD
Matrix: Water
Analysis Batch: 128326

Client Sample ID: SG-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		20.0	26.3		ug/L		132	22 - 150	2	35
Benzene	ND		10.0	9.34		ug/L		93	80 - 120	2	32
Bromoform	ND		10.0	10.3		ug/L		103	46 - 150	0	35
Bromomethane	ND		10.0	7.68		ug/L		77	33 - 150	1	35
Carbon disulfide	ND		10.0	8.53		ug/L		85	54 - 132	2	35
Carbon tetrachloride	ND		10.0	9.20		ug/L		92	55 - 150	1	35
Chlorobenzene	0.75	J	10.0	10.2		ug/L		94	80 - 120	2	29
Chlorodibromomethane	ND		10.0	10.2		ug/L		102	60 - 140	4	35
Chloroethane	ND		10.0	9.21		ug/L		92	36 - 142	8	35
Chloroform	ND		10.0	9.12		ug/L		91	72 - 127	2	35
Chloromethane	ND		10.0	12.7		ug/L		127	50 - 139	11	35
cis-1,2-Dichloroethene	ND		10.0	9.99		ug/L		100	70 - 120	6	35
cis-1,3-Dichloropropene	ND		10.0	9.48		ug/L		95	66 - 120	2	35
Cyclohexane	ND		10.0	9.37		ug/L		94	45 - 142	1	35
Dichlorobromomethane	ND		10.0	9.31		ug/L		93	66 - 130	2	35
Dichlorodifluoromethane	ND		10.0	9.15		ug/L		91	13 - 150	0	35
Ethylbenzene	ND		10.0	8.66		ug/L		87	72 - 126	1	33
1,2-Dibromoethane	ND		10.0	10.2		ug/L		102	74 - 123	0	35
Isopropylbenzene	ND		10.0	8.69		ug/L		87	58 - 130	1	35
Methyl tert-butyl ether	ND		10.0	8.75		ug/L		87	64 - 123	2	35
Methylcyclohexane	ND		10.0	8.75		ug/L		88	45 - 145	3	35
Methylene Chloride	ND		10.0	9.10		ug/L		91	63 - 129	7	35
Styrene	ND		10.0	8.87		ug/L		89	71 - 127	4	34
Tetrachloroethene	ND		10.0	8.84		ug/L		88	70 - 135	5	35
Toluene	ND		10.0	8.63		ug/L		86	80 - 123	1	35
trans-1,2-Dichloroethene	ND		10.0	9.82		ug/L		98	73 - 126	3	35
trans-1,3-Dichloropropene	ND		10.0	9.92		ug/L		99	65 - 125	3	35
Trichloroethene	ND		10.0	9.77		ug/L		98	73 - 120	3	35
Trichlorofluoromethane	ND		10.0	9.01		ug/L		90	44 - 150	3	35
Vinyl chloride	ND		10.0	11.0		ug/L		110	53 - 138	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*64 - 135*
4-Bromofluorobenzene (Surr)	*94*		*70 - 118*
Dibromofluoromethane (Surr)	*102*		*70 - 128*
Toluene-d8 (Surr)	*96*		*71 - 118*

Lab Sample ID: MB 180-128456/7
Matrix: Water
Analysis Batch: 128456

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 12:20	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 12:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 12:20	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 12:20	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 12:20	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 12:20	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-128456/7
Matrix: Water
Analysis Batch: 128456

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 12:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 12:20	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 12:20	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 12:20	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 12:20	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 12:20	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 12:20	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 12:20	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 12:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 12:20	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 12:20	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 12:20	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 12:20	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 12:20	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 12:20	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 12:20	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 12:20	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 12:20	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 12:20	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 12:20	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 12:20	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 12:20	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 12:20	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 12:20	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 12:20	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 12:20	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 12:20	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 12:20	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 12:20	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 12:20	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 12:20	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 12:20	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 12:20	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 12:20	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 12:20	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 12:20	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 12:20	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 12:20	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 12:20	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 12:20	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 12:20	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 12:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 12:20*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 118*		*12/16/14 12:20*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*12/16/14 12:20*	*1*
Toluene-d8 (Surr)	*102*		*71 - 118*		*12/16/14 12:20*	*1*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-128456/10
Matrix: Water
Analysis Batch: 128456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	8.52		ug/L		85	63 - 133
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.28		ug/L		83	46 - 148
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	77 - 127
1,1-Dichloroethane	10.0	9.23		ug/L		92	73 - 126
1,1-Dichloroethene	10.0	9.60		ug/L		96	65 - 136
1,2,4-Trichlorobenzene	10.0	8.92		ug/L		89	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	9.99		ug/L		100	37 - 133
1,2-Dichlorobenzene	10.0	9.74		ug/L		97	77 - 120
1,2-Dichloroethane	10.0	9.31		ug/L		93	68 - 132
1,2-Dichloropropane	10.0	9.47		ug/L		95	76 - 124
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	76 - 120
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	77 - 120
2-Butanone (MEK)	20.0	24.2		ug/L		121	39 - 138
2-Hexanone	20.0	22.4		ug/L		112	25 - 132
4-Methyl-2-pentanone (MIBK)	20.0	21.1		ug/L		105	45 - 145
Acetone	20.0	23.3		ug/L		117	22 - 150
Benzene	10.0	9.21		ug/L		92	80 - 120
Bromoform	10.0	10.1		ug/L		101	46 - 150
Bromomethane	10.0	6.39		ug/L		64	33 - 150
Carbon disulfide	10.0	8.17		ug/L		82	54 - 132
Carbon tetrachloride	10.0	9.03		ug/L		90	55 - 150
Chlorobenzene	10.0	9.93		ug/L		99	80 - 120
Chlorodibromomethane	10.0	10.1		ug/L		101	60 - 140
Chloroethane	10.0	8.79		ug/L		88	36 - 142
Chloroform	10.0	9.36		ug/L		94	72 - 127
Chloromethane	10.0	11.6		ug/L		116	50 - 139
cis-1,2-Dichloroethene	10.0	9.34		ug/L		93	70 - 120
cis-1,3-Dichloropropene	10.0	8.82		ug/L		88	66 - 120
Cyclohexane	10.0	9.69		ug/L		97	45 - 142
Dichlorobromomethane	10.0	9.01		ug/L		90	66 - 130
Dichlorodifluoromethane	10.0	9.86		ug/L		99	13 - 150
Ethylbenzene	10.0	8.77		ug/L		88	72 - 126
1,2-Dibromoethane	10.0	10.4		ug/L		104	74 - 123
Isopropylbenzene	10.0	9.16		ug/L		92	58 - 130
Methyl tert-butyl ether	10.0	8.05		ug/L		80	64 - 123
Methylcyclohexane	10.0	8.68		ug/L		87	45 - 145
Methylene Chloride	10.0	10.5		ug/L		105	63 - 129
Styrene	10.0	9.45		ug/L		95	71 - 127
Tetrachloroethene	10.0	9.66		ug/L		97	70 - 135
Toluene	10.0	9.16		ug/L		92	80 - 123
trans-1,2-Dichloroethene	10.0	10.0		ug/L		100	73 - 126
trans-1,3-Dichloropropene	10.0	8.81		ug/L		88	65 - 125
Trichloroethene	10.0	9.83		ug/L		98	73 - 120
Trichlorofluoromethane	10.0	9.09		ug/L		91	44 - 150
Vinyl chloride	10.0	10.9		ug/L		109	53 - 138

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-128456/10
Matrix: Water
Analysis Batch: 128456

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*92*		*64 - 135*
4-Bromofluorobenzene (Surr)	*97*		*70 - 118*
Dibromofluoromethane (Surr)	*101*		*70 - 128*
Toluene-d8 (Surr)	*101*		*71 - 118*

Lab Sample ID: MB 180-128468/5
Matrix: Water
Analysis Batch: 128468

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 12:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 12:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 12:07	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 12:07	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 12:07	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 12:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 12:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 12:07	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 12:07	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 12:07	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 12:07	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 12:07	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 12:07	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 12:07	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 12:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 12:07	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 12:07	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 12:07	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 12:07	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 12:07	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 12:07	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 12:07	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 12:07	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 12:07	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 12:07	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 12:07	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 12:07	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 12:07	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 12:07	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 12:07	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 12:07	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 12:07	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 12:07	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 12:07	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 12:07	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 12:07	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 12:07	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 12:07	1

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 180-128468/5
Matrix: Water
Analysis Batch: 128468

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 12:07	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 12:07	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 12:07	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 12:07	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 12:07	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 12:07	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 12:07	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 12:07	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 12:07	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 12:07	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*12/16/14 12:07*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 118*		*12/16/14 12:07*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 12:07*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 12:07*	*1*

Lab Sample ID: LCS 180-128468/8
Matrix: Water
Analysis Batch: 128468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	8.49		ug/L		85	63 - 133
1,1,2,2-Tetrachloroethane	10.0	9.19		ug/L		92	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.28		ug/L		93	46 - 148
1,1,2-Trichloroethane	10.0	8.87		ug/L		89	77 - 127
1,1-Dichloroethane	10.0	9.06		ug/L		91	73 - 126
1,1-Dichloroethene	10.0	9.12		ug/L		91	65 - 136
1,2,4-Trichlorobenzene	10.0	8.63		ug/L		86	60 - 127
1,2-Dibromo-3-Chloropropane	10.0	9.18		ug/L		92	37 - 133
1,2-Dichlorobenzene	10.0	9.00		ug/L		90	77 - 120
1,2-Dichloroethane	10.0	9.16		ug/L		92	68 - 132
1,2-Dichloropropane	10.0	8.93		ug/L		89	76 - 124
1,3-Dichlorobenzene	10.0	9.22		ug/L		92	76 - 120
1,4-Dichlorobenzene	10.0	9.14		ug/L		91	77 - 120
2-Butanone (MEK)	20.0	18.6		ug/L		93	39 - 138
2-Hexanone	20.0	15.9		ug/L		80	25 - 132
4-Methyl-2-pentanone (MIBK)	20.0	18.5		ug/L		92	45 - 145
Acetone	20.0	19.9		ug/L		100	22 - 150
Benzene	10.0	9.13		ug/L		91	80 - 120
Bromoform	10.0	9.17		ug/L		92	46 - 150
Bromomethane	10.0	10.1		ug/L		101	33 - 150
Carbon disulfide	10.0	8.69		ug/L		87	54 - 132
Carbon tetrachloride	10.0	9.20		ug/L		92	55 - 150
Chlorobenzene	10.0	9.41		ug/L		94	80 - 120
Chlorodibromomethane	10.0	9.43		ug/L		94	60 - 140
Chloroethane	10.0	8.97		ug/L		90	36 - 142

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 180-128468/8
Matrix: Water
Analysis Batch: 128468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	10.0	9.08		ug/L		91	72 - 127
Chloromethane	10.0	8.94		ug/L		89	50 - 139
cis-1,2-Dichloroethene	10.0	9.66		ug/L		97	70 - 120
cis-1,3-Dichloropropene	10.0	8.59		ug/L		86	66 - 120
Cyclohexane	10.0	9.02		ug/L		90	45 - 142
Dichlorobromomethane	10.0	8.96		ug/L		90	66 - 130
Dichlorodifluoromethane	10.0	9.60		ug/L		96	13 - 150
Ethylbenzene	10.0	9.42		ug/L		94	72 - 126
1,2-Dibromoethane	10.0	9.65		ug/L		96	74 - 123
Isopropylbenzene	10.0	9.73		ug/L		97	58 - 130
Methyl tert-butyl ether	10.0	8.42		ug/L		84	64 - 123
Methylcyclohexane	10.0	8.48		ug/L		85	45 - 145
Methylene Chloride	10.0	10.6		ug/L		106	63 - 129
Styrene	10.0	9.66		ug/L		97	71 - 127
Tetrachloroethene	10.0	9.69		ug/L		97	70 - 135
Toluene	10.0	9.52		ug/L		95	80 - 123
trans-1,2-Dichloroethene	10.0	9.08		ug/L		91	73 - 126
trans-1,3-Dichloropropene	10.0	8.96		ug/L		90	65 - 125
Trichloroethene	10.0	9.05		ug/L		90	73 - 120
Trichlorofluoromethane	10.0	9.53		ug/L		95	44 - 150
Vinyl chloride	10.0	8.94		ug/L		89	53 - 138

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*64 - 135*
4-Bromofluorobenzene (Surr)	*94*		*70 - 118*
Dibromofluoromethane (Surr)	*94*		*70 - 128*
Toluene-d8 (Surr)	*96*		*71 - 118*

Lab Sample ID: 180-39575-1 MS
Matrix: Water
Analysis Batch: 128468

Client Sample ID: SW-5_LANGAN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		10.0	9.22		ug/L		92	63 - 133
1,1,2,2-Tetrachloroethane	ND		10.0	10.2		ug/L		102	62 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10.0	8.68		ug/L		87	46 - 148
1,1,2-Trichloroethane	ND		10.0	10.2		ug/L		102	77 - 127
1,1-Dichloroethane	ND		10.0	9.16		ug/L		92	73 - 126
1,1-Dichloroethene	ND		10.0	8.79		ug/L		88	65 - 136
1,2,4-Trichlorobenzene	ND		10.0	8.46		ug/L		85	60 - 127
1,2-Dibromo-3-Chloropropane	ND		10.0	8.86		ug/L		89	37 - 133
1,2-Dichlorobenzene	0.63	J	10.0	9.98		ug/L		93	77 - 120
1,2-Dichloroethane	ND		10.0	9.14		ug/L		91	68 - 132
1,2-Dichloropropane	ND		10.0	9.30		ug/L		93	76 - 124
1,3-Dichlorobenzene	ND		10.0	9.31		ug/L		93	76 - 120
1,4-Dichlorobenzene	ND		10.0	9.42		ug/L		94	77 - 120
2-Butanone (MEK)	ND		10.0	9.89		ug/L		99	39 - 138

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-1 MS
Matrix: Water
Analysis Batch: 128468

Client Sample ID: SW-5_LANGAN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Hexanone	ND		10.0	8.10		ug/L		81	25 - 132
4-Methyl-2-pentanone (MIBK)	ND		10.0	9.09		ug/L		91	45 - 145
Acetone	2.5	J	10.0	10.3		ug/L		78	22 - 150
Benzene	ND		10.0	9.25		ug/L		93	80 - 120
Bromoform	ND		10.0	9.79		ug/L		98	46 - 150
Bromomethane	ND		10.0	9.60		ug/L		96	33 - 150
Carbon disulfide	ND		10.0	8.41		ug/L		84	54 - 132
Carbon tetrachloride	ND		10.0	9.29		ug/L		93	55 - 150
Chlorobenzene	0.34	J	10.0	10.8		ug/L		104	80 - 120
Chlorodibromomethane	ND		10.0	10.2		ug/L		102	60 - 140
Chloroethane	ND		10.0	9.42		ug/L		94	36 - 142
Chloroform	ND		10.0	9.09		ug/L		91	72 - 127
Chloromethane	ND		10.0	9.33		ug/L		93	50 - 139
cis-1,2-Dichloroethene	ND		10.0	9.15		ug/L		92	70 - 120
cis-1,3-Dichloropropene	ND		10.0	9.06		ug/L		91	66 - 120
Cyclohexane	ND		10.0	9.22		ug/L		92	45 - 142
Dichlorobromomethane	ND		10.0	8.79		ug/L		88	66 - 130
Dichlorodifluoromethane	ND		10.0	9.24		ug/L		92	13 - 150
Ethylbenzene	ND		10.0	10.4		ug/L		104	72 - 126
1,2-Dibromoethane	ND		10.0	9.92		ug/L		99	74 - 123
Isopropylbenzene	ND		10.0	10.6		ug/L		106	58 - 130
Methyl tert-butyl ether	ND		10.0	8.69		ug/L		87	64 - 123
Methylcyclohexane	ND		10.0	8.91		ug/L		89	45 - 145
Methylene Chloride	ND		10.0	10.5		ug/L		105	63 - 129
Styrene	ND		10.0	10.1		ug/L		101	71 - 127
Tetrachloroethene	ND		10.0	10.0		ug/L		100	70 - 135
Toluene	ND		10.0	10.4		ug/L		104	80 - 123
trans-1,2-Dichloroethene	ND		10.0	9.31		ug/L		93	73 - 126
trans-1,3-Dichloropropene	ND		10.0	10.8		ug/L		108	65 - 125
Trichloroethene	ND		10.0	9.34		ug/L		93	73 - 120
Trichlorofluoromethane	ND		10.0	9.21		ug/L		92	44 - 150
Vinyl chloride	ND		10.0	9.20		ug/L		92	53 - 138

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*64 - 135*
4-Bromofluorobenzene (Surr)	*104*		*70 - 118*
Dibromofluoromethane (Surr)	*93*		*70 - 128*
Toluene-d8 (Surr)	*104*		*71 - 118*

Lab Sample ID: 180-39575-1 MSD
Matrix: Water
Analysis Batch: 128468

Client Sample ID: SW-5_LANGAN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		10.0	9.13		ug/L		91	63 - 133	1	35
1,1,2,2-Tetrachloroethane	ND		10.0	10.1		ug/L		101	62 - 125	1	35
1,1,2-Trichloro-1,2,2-trifluoroetha ne	ND		10.0	8.70		ug/L		87	46 - 148	0	35

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-1 MSD
Matrix: Water
Analysis Batch: 128468

Client Sample ID: SW-5_LANGAN
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloroethane	ND		10.0	9.64		ug/L		96	77 - 127	5	35
1,1-Dichloroethane	ND		10.0	9.40		ug/L		94	73 - 126	3	35
1,1-Dichloroethene	ND		10.0	8.53		ug/L		85	65 - 136	3	35
1,2,4-Trichlorobenzene	ND		10.0	8.51		ug/L		85	60 - 127	1	35
1,2-Dibromo-3-Chloropropane	ND		10.0	8.77		ug/L		88	37 - 133	1	35
1,2-Dichlorobenzene	0.63	J	10.0	9.99		ug/L		94	77 - 120	0	24
1,2-Dichloroethane	ND		10.0	9.28		ug/L		93	68 - 132	2	32
1,2-Dichloropropane	ND		10.0	9.15		ug/L		91	76 - 124	2	34
1,3-Dichlorobenzene	ND		10.0	9.39		ug/L		94	76 - 120	1	24
1,4-Dichlorobenzene	ND		10.0	9.80		ug/L		98	77 - 120	4	24
2-Butanone (MEK)	ND		10.0	10.1		ug/L		101	39 - 138	2	35
2-Hexanone	ND		10.0	7.63		ug/L		76	25 - 132	6	35
4-Methyl-2-pentanone (MIBK)	ND		10.0	9.67		ug/L		97	45 - 145	6	35
Acetone	2.5	J	10.0	12.6		ug/L		101	22 - 150	20	35
Benzene	ND		10.0	9.33		ug/L		93	80 - 120	1	32
Bromoform	ND		10.0	8.58		ug/L		86	46 - 150	13	35
Bromomethane	ND		10.0	9.91		ug/L		99	33 - 150	3	35
Carbon disulfide	ND		10.0	8.21		ug/L		82	54 - 132	2	35
Carbon tetrachloride	ND		10.0	8.92		ug/L		89	55 - 150	4	35
Chlorobenzene	0.34	J	10.0	10.0		ug/L		97	80 - 120	7	29
Chlorodibromomethane	ND		10.0	9.46		ug/L		95	60 - 140	8	35
Chloroethane	ND		10.0	9.16		ug/L		92	36 - 142	3	35
Chloroform	ND		10.0	9.44		ug/L		94	72 - 127	4	35
Chloromethane	ND		10.0	9.48		ug/L		95	50 - 139	2	35
cis-1,2-Dichloroethene	ND		10.0	9.36		ug/L		94	70 - 120	2	35
cis-1,3-Dichloropropene	ND		10.0	8.95		ug/L		89	66 - 120	1	35
Cyclohexane	ND		10.0	8.78		ug/L		88	45 - 142	5	35
Dichlorobromomethane	ND		10.0	8.82		ug/L		88	66 - 130	0	35
Dichlorodifluoromethane	ND		10.0	8.63		ug/L		86	13 - 150	7	35
Ethylbenzene	ND		10.0	9.46		ug/L		95	72 - 126	10	33
1,2-Dibromoethane	ND		10.0	9.72		ug/L		97	74 - 123	2	35
Isopropylbenzene	ND		10.0	9.73		ug/L		97	58 - 130	8	35
Methyl tert-butyl ether	ND		10.0	8.88		ug/L		89	64 - 123	2	35
Methylcyclohexane	ND		10.0	8.82		ug/L		88	45 - 145	1	35
Methylene Chloride	ND		10.0	11.1		ug/L		111	63 - 129	6	35
Styrene	ND		10.0	9.50		ug/L		95	71 - 127	6	34
Tetrachloroethene	ND		10.0	9.01		ug/L		90	70 - 135	10	35
Toluene	ND		10.0	9.85		ug/L		99	80 - 123	5	35
trans-1,2-Dichloroethene	ND		10.0	9.21		ug/L		92	73 - 126	1	35
trans-1,3-Dichloropropene	ND		10.0	10.4		ug/L		104	65 - 125	4	35
Trichloroethene	ND		10.0	9.08		ug/L		91	73 - 120	3	35
Trichlorofluoromethane	ND		10.0	8.76		ug/L		88	44 - 150	5	35
Vinyl chloride	ND		10.0	8.80		ug/L		88	53 - 138	4	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*64 - 135*
4-Bromofluorobenzene (Surr)	*94*		*70 - 118*
Dibromofluoromethane (Surr)	*90*		*70 - 128*

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 180-39575-1 MSD
Matrix: Water
Analysis Batch: 128468

Client Sample ID: SW-5_LANGAN
Prep Type: Total/NA

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	100		71 - 118

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 180-127659/1-A
Matrix: Water
Analysis Batch: 127827

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127659

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		1.0	0.055	ug/L		12/09/14 08:31	12/10/14 10:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	63		30 - 150	12/09/14 08:31	12/10/14 10:55	1
2-Fluorobiphenyl	69		30 - 150	12/09/14 08:31	12/10/14 10:55	1
2-Fluorophenol	67		30 - 150	12/09/14 08:31	12/10/14 10:55	1
Nitrobenzene-d5	66		30 - 150	12/09/14 08:31	12/10/14 10:55	1
Phenol-d5	65		30 - 150	12/09/14 08:31	12/10/14 10:55	1
Terphenyl-d14	65		10 - 150	12/09/14 08:31	12/10/14 10:55	1

Lab Sample ID: LCS 180-127659/2-A
Matrix: Water
Analysis Batch: 127827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127659

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	20.0	14.3		ug/L		72	30 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	77		30 - 150
2-Fluorobiphenyl	76		30 - 150
2-Fluorophenol	71		30 - 150
Nitrobenzene-d5	77		30 - 150
Phenol-d5	70		30 - 150
Terphenyl-d14	71		10 - 150

Lab Sample ID: LCSD 180-127659/3-A
Matrix: Water
Analysis Batch: 127827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 127659

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	20.0	16.0		ug/L		80	30 - 150	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol	88		30 - 150
2-Fluorobiphenyl	79		30 - 150
2-Fluorophenol	79		30 - 150
Nitrobenzene-d5	81		30 - 150
Phenol-d5	77		30 - 150

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCSD 180-127659/3-A
Matrix: Water
Analysis Batch: 127827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 127659

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Terphenyl-d14	73		10 - 150

Lab Sample ID: MB 180-127798/1-A
Matrix: Water
Analysis Batch: 128007

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 127798

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		1.0	0.055	ug/L		12/10/14 08:24	12/11/14 13:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol	69		30 - 150	12/10/14 08:24	12/11/14 13:19	1
2-Fluorobiphenyl	70		30 - 150	12/10/14 08:24	12/11/14 13:19	1
2-Fluorophenol	73		30 - 150	12/10/14 08:24	12/11/14 13:19	1
Nitrobenzene-d5	74		30 - 150	12/10/14 08:24	12/11/14 13:19	1
Phenol-d5	71		30 - 150	12/10/14 08:24	12/11/14 13:19	1
Terphenyl-d14	71		10 - 150	12/10/14 08:24	12/11/14 13:19	1

Lab Sample ID: LCS 180-127798/2-A
Matrix: Water
Analysis Batch: 128007

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 127798

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	20.0	15.1		ug/L		76	30 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol	78		30 - 150
2-Fluorobiphenyl	78		30 - 150
2-Fluorophenol	78		30 - 150
Nitrobenzene-d5	78		30 - 150
Phenol-d5	73		30 - 150
Terphenyl-d14	70		10 - 150

Lab Sample ID: 180-39575-10 MS
Matrix: Water
Analysis Batch: 128007

Client Sample ID: SG-4
Prep Type: Total/NA
Prep Batch: 127798

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	ND		20.0	11.3		ug/L		57	30 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
2,4,6-Tribromophenol	89		30 - 150
2-Fluorobiphenyl	68		30 - 150
2-Fluorophenol	57		30 - 150
Nitrobenzene-d5	65		30 - 150
Phenol-d5	62		30 - 150
Terphenyl-d14	64		10 - 150

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: 180-39575-10 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128007 — **Prep Batch: 127798**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	ND		18.5	10.1		ug/L		55	30 - 150	11	35

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*96*		*30 - 150*
2-Fluorobiphenyl	*66*		*30 - 150*
2-Fluorophenol	*59*		*30 - 150*
Nitrobenzene-d5	*64*		*30 - 150*
Phenol-d5	*61*		*30 - 150*
Terphenyl-d14	*63*		*10 - 150*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 180-128954/17 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128954

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			12/20/14 17:09	1

Lab Sample ID: LCS 180-128954/16 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128954

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	48.4		mg/L		97	90 - 110

Lab Sample ID: MB 180-129078/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 129078

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			12/22/14 12:22	1

Lab Sample ID: LCS 180-129078/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 129078

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	48.6		mg/L		97	90 - 110

Lab Sample ID: 180-39575-10 MS — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 129078

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	79		25.0	107		mg/L		112	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 180-39575-10 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 129078

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	79		25.0	100		mg/L		87	80 - 120	6	20

Lab Sample ID: LB3 180-129253/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 129332

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		10	2.1	mg/Kg			12/24/14 10:57	1

Lab Sample ID: LCS 180-129253/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 129332

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	100	103		mg/Kg		103	90 - 110
Chloride	500	550		mg/Kg		110	90 - 110
Fluoride	25.0	26.7		mg/Kg		107	90 - 110
Sulfate	500	505		mg/Kg		101	90 - 110

Lab Sample ID: 180-39575-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 129332

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromide	ND		68.3	75.3		mg/Kg	☼	110	80 - 120
Chloride	31	J	341	287	F1	mg/Kg	☼	75	80 - 120
Fluoride	ND		17.1	26.9	F1	mg/Kg	☼	158	80 - 120
Sulfate	140		341	361	F1	mg/Kg	☼	65	80 - 120

Lab Sample ID: 180-39575-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 129332

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Bromide	ND		67.4	71.7		mg/Kg	☼	106	80 - 120	5	20
Chloride	31	J	337	268	F1	mg/Kg	☼	71	80 - 120	7	20
Fluoride	ND		16.8	23.4	F1	mg/Kg	☼	139	80 - 120	14	20
Sulfate	140		337	598	F1 F2	mg/Kg	☼	137	80 - 120	49	20

Lab Sample ID: LB3 180-129253/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Soluble**
Analysis Batch: 129476

Analyte	LB3 Result	LB3 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.84	J	10	2.1	mg/Kg			12/30/14 01:21	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 180-129253/2-A
Matrix: Solid
Analysis Batch: 129476

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			500	515		mg/Kg		103	90 - 110		

Method: 8315A - Carbonyl Compounds (HPLC)

Lab Sample ID: MB 640-113508/1-A
Matrix: Water
Analysis Batch: 113556

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 113508

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 12:30	1

Lab Sample ID: LCS 640-113508/2-A
Matrix: Water
Analysis Batch: 113556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113508

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Formaldehyde			150	147		ug/L		98	73 - 133		

Lab Sample ID: LCSD 640-113508/3-A
Matrix: Water
Analysis Batch: 113556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 113508

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde			150	154		ug/L		103	73 - 133	5	20

Lab Sample ID: 180-39575-10 MS
Matrix: Water
Analysis Batch: 113556

Client Sample ID: SG-4
Prep Type: Total/NA
Prep Batch: 113508

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Formaldehyde	8.5	J	150	152		ug/L		96	40 - 142		

Lab Sample ID: 180-39575-10 MSD
Matrix: Water
Analysis Batch: 113556

Client Sample ID: SG-4
Prep Type: Total/NA
Prep Batch: 113508

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	8.5	J	150	154		ug/L		97	40 - 142	1	26

Lab Sample ID: MB 640-113540/1-A
Matrix: Solid
Analysis Batch: 113605

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 113540

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		100	78	ug/Kg		12/08/14 07:45	12/10/14 09:02	1

Method: 8315A - Carbonyl Compounds (HPLC) (Continued)

Lab Sample ID: LCS 640-113540/2-A
Matrix: Solid
Analysis Batch: 113605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 113540

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Formaldehyde			743	554		ug/Kg		75	70 - 141		

Lab Sample ID: LCSD 640-113540/3-A
Matrix: Solid
Analysis Batch: 113605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 113540

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde			739	593		ug/Kg		80	70 - 141	7	20

Lab Sample ID: 180-39575-4 MS
Matrix: Solid
Analysis Batch: 113605

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 113540

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Formaldehyde	1100		1010	1150	F1	ug/Kg	☼	9	18 - 153		

Lab Sample ID: 180-39575-4 MSD
Matrix: Solid
Analysis Batch: 113605

Client Sample ID: SED-102
Prep Type: Total/NA
Prep Batch: 113540

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Formaldehyde	1100		1020	1160	F1	ug/Kg	☼	10	18 - 153	1	22

Method: In-House - Sulfonic Acids by LCMS/MS

Lab Sample ID: MB 200-81831/1-A
Matrix: Solid
Analysis Batch: 81860

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 81831

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 19:39	2
p-Phenolsulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 19:39	2
Benzenesulfonic acid	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 19:39	2
Resorcinol	ND		20	20	ug/Kg		12/08/14 15:50	12/09/14 19:39	2
2,3',4-Trihydroxydiphenyl	ND		60	60	ug/Kg		12/08/14 15:50	12/09/14 19:39	2

Lab Sample ID: LCS 200-81831/3-A
Matrix: Solid
Analysis Batch: 81860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 81831

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
m-Benzenedisulfonic acid			99.6	96.0		ug/Kg		96	60 - 140		
p-Phenolsulfonic acid			99.6	104		ug/Kg		104	60 - 140		
Benzenesulfonic acid			99.6	68.2		ug/Kg		68	60 - 140		
Resorcinol			99.6	135		ug/Kg		135	60 - 140		
2,3',4-Trihydroxydiphenyl			99.6	118	*	ug/Kg		118	10 - 110		

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: LLCS 200-81831/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	20.0	ND		ug/Kg		67	60 - 140
p-Phenolsulfonic acid	20.0	ND		ug/Kg		72	60 - 140
Benzenesulfonic acid	20.0	ND	*	ug/Kg		6	60 - 140
Resorcinol	20.0	ND		ug/Kg		86	60 - 140
2,3',4-Trihydroxydiphenyl	20.0	ND		ug/Kg		62	10 - 110

Lab Sample ID: 180-39575-2 MS — **Client Sample ID: SED-103**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Resorcinol	ND		1940	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND	*	1940	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-39575-2 MS — **Client Sample ID: SED-103**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	ND		97.1	ND	F1	ug/Kg		0	60 - 140
p-Phenolsulfonic acid	ND		97.1	ND	F1	ug/Kg		0	60 - 140
Benzenesulfonic acid	ND	*	97.1	ND	F1	ug/Kg		0	60 - 140

Lab Sample ID: 180-39575-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Resorcinol	ND		1990	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND	*	1990	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-39575-4 MS — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	400		99.6	568	4	ug/Kg		164	60 - 140
p-Phenolsulfonic acid	ND		99.6	111		ug/Kg		111	60 - 140
Benzenesulfonic acid	ND	*	99.6	37.6	F1	ug/Kg		38	60 - 140

Lab Sample ID: 180-39575-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Resorcinol	ND		1970	ND	F1	ug/Kg		0	60 - 140	NC	50
2,3',4-Trihydroxydiphenyl	ND	*	1970	ND	F1	ug/Kg		0	10 - 110	NC	50

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-39575-4 MSD — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m-Benzenedisulfonic acid	400		98.6	530	4	ug/Kg		127	60 - 140	7	50
p-Phenolsulfonic acid	ND		98.5	58.3	F1 F2	ug/Kg		59	60 - 140	62	50
Benzenesulfonic acid	ND	*	98.5	38.6	F1	ug/Kg		39	60 - 140	3	50

Lab Sample ID: 180-39575-6 MS — **Client Sample ID: SED-101**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	81000	E	98.8	85800	E 4	ug/Kg		4529	60 - 140
p-Phenolsulfonic acid	7200		1970	8840		ug/Kg		83	60 - 140
Benzenesulfonic acid	850	*	98.7	925	4	ug/Kg		77	60 - 140
Resorcinol	ND		1970	ND	F1	ug/Kg		0	60 - 140
2,3',4-Trihydroxydiphenyl	ND	*	1970	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: 180-39575-7 MS — **Client Sample ID: DUP120314**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 81860 — **Prep Batch: 81831**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	84000	E	98.7	93600	E 4	ug/Kg		9251	60 - 140
p-Phenolsulfonic acid	7400		1970	9600		ug/Kg		109	60 - 140
Benzenesulfonic acid	870	*	98.6	1050	4	ug/Kg		175	60 - 140
Resorcinol	ND		1970	636	F1	ug/Kg		32	60 - 140
2,3',4-Trihydroxydiphenyl	ND	*	1970	ND	F1	ug/Kg		0	10 - 110

Lab Sample ID: MB 200-81835/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		50	18	ug/L		12/09/14 15:47	12/10/14 12:53	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 12:53	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 12:53	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 12:53	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 12:53	10

Lab Sample ID: LCS 200-81835/3-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	1000	1040		ug/L		104	60 - 140
p-Phenolsulfonic acid	1000	1060		ug/L		106	60 - 140
Benzenesulfonic acid	1000	849		ug/L		85	60 - 140
Resorcinol	1000	1170		ug/L		117	60 - 140
2,3',4-Trihydroxydiphenyl	1000	1070		ug/L		107	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: LLCS 200-81835/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	50.0	54.6		ug/L		109	60 - 140
p-Phenolsulfonic acid	50.0	29.8	J	ug/L		60	60 - 140
Benzenesulfonic acid	50.0	44.6	J	ug/L		89	60 - 140
Resorcinol	50.0	39.9	J	ug/L		80	60 - 140
2,3',4-Trihydroxydiphenyl	50.0	41.4	J	ug/L		83	10 - 110

Lab Sample ID: 180-39575-1 MS — **Client Sample ID: SW-5_LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	890		1000	2010		ug/L		112	60 - 140
p-Phenolsulfonic acid	97		1000	1400		ug/L		130	60 - 140
Benzenesulfonic acid	ND		1000	772		ug/L		77	60 - 140
Resorcinol	ND		1000	1100		ug/L		110	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	947		ug/L		95	10 - 110

Lab Sample ID: 180-39575-3 MS — **Client Sample ID: SW-4_LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	550		1000	1640		ug/L		109	60 - 140
p-Phenolsulfonic acid	73		1000	1490	F1	ug/L		141	60 - 140
Benzenesulfonic acid	ND		1000	865		ug/L		86	60 - 140
Resorcinol	ND		1000	1150		ug/L		115	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1080		ug/L		108	10 - 110

Lab Sample ID: 180-39575-5 MS — **Client Sample ID: SW-3_LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	2300		1000	3360		ug/L		103	60 - 140
p-Phenolsulfonic acid	270		1000	1470		ug/L		120	60 - 140
Benzenesulfonic acid	12	J	1000	711		ug/L		70	60 - 140
Resorcinol	21	J	1000	1140		ug/L		111	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1140	F1	ug/L		114	10 - 110

Lab Sample ID: 180-39575-8 MS — **Client Sample ID: SG-7**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	440		1000	1450		ug/L		101	60 - 140
p-Phenolsulfonic acid	45	J	1000	1270		ug/L		122	60 - 140
Benzenesulfonic acid	ND		1000	655		ug/L		66	60 - 140
Resorcinol	ND		1000	1080		ug/L		108	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1160	F1	ug/L		116	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-39575-9 MS — **Client Sample ID: SG-5**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	2300		1000	3390		ug/L		111	60 - 140
p-Phenolsulfonic acid	210		1000	1400		ug/L		119	60 - 140
Benzenesulfonic acid	13	J	1000	698		ug/L		68	60 - 140
Resorcinol	170		1000	1230		ug/L		106	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1010		ug/L		101	10 - 110

Lab Sample ID: 180-39575-10 MS — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	2700		1000	3520		ug/L		87	60 - 140
p-Phenolsulfonic acid	220		1000	1550		ug/L		133	60 - 140
Benzenesulfonic acid	23	J	1000	764		ug/L		74	60 - 140
Resorcinol	420		1000	1330		ug/L		91	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	971		ug/L		97	10 - 110

Lab Sample ID: 180-39575-10 MSD — **Client Sample ID: SG-4**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
m-Benzenedisulfonic acid	2700		1000	3630		ug/L		98	60 - 140	3	50
p-Phenolsulfonic acid	220		1000	1590		ug/L		136	60 - 140	2	50
Benzenesulfonic acid	23	J	1000	720		ug/L		70	60 - 140	6	50
Resorcinol	420		1000	1360		ug/L		94	60 - 140	3	50
2,3',4-Trihydroxydiphenyl	ND		1000	1080		ug/L		108	10 - 110	10	50

Lab Sample ID: 180-39575-11 MS — **Client Sample ID: SG-3**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	3100		1000	4240		ug/L		117	60 - 140
p-Phenolsulfonic acid	160		1000	1350		ug/L		119	60 - 140
Benzenesulfonic acid	27	J	1000	716		ug/L		69	60 - 140
Resorcinol	440		1000	1440		ug/L		100	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	977		ug/L		98	10 - 110

Lab Sample ID: 180-39575-12 MS — **Client Sample ID: DUP120414**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	2600		1000	3910		ug/L		130	60 - 140
p-Phenolsulfonic acid	160		1000	1620	F1	ug/L		146	60 - 140
Benzenesulfonic acid	20	J	1000	840		ug/L		82	60 - 140
Resorcinol	430		1000	1540		ug/L		112	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1220	F1	ug/L		122	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-39575-13 MS — **Client Sample ID: SG-8**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	190		1000	1240		ug/L		104	60 - 140
p-Phenolsulfonic acid	94		1000	1230		ug/L		113	60 - 140
Benzenesulfonic acid	ND		1000	649		ug/L		65	60 - 140
Resorcinol	540		1000	1490		ug/L		95	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1020		ug/L		102	10 - 110

Lab Sample ID: 180-39575-14 MS — **Client Sample ID: SW-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	88		1000	1110		ug/L		102	60 - 140
p-Phenolsulfonic acid	ND		1000	1180		ug/L		118	60 - 140
Benzenesulfonic acid	ND		1000	663		ug/L		66	60 - 140
Resorcinol	450		1000	1370		ug/L		92	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	697		ug/L		70	10 - 110

Lab Sample ID: 180-39575-15 MS — **Client Sample ID: SG-2**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	88		1000	1160		ug/L		107	60 - 140
p-Phenolsulfonic acid	ND		1000	1220		ug/L		122	60 - 140
Benzenesulfonic acid	ND		1000	661		ug/L		66	60 - 140
Resorcinol	390		1000	1310		ug/L		92	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	840		ug/L		84	10 - 110

Lab Sample ID: 180-39575-16 MS — **Client Sample ID: SH-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	90		1000	1160		ug/L		107	60 - 140
p-Phenolsulfonic acid	ND		1000	1180		ug/L		118	60 - 140
Benzenesulfonic acid	ND		1000	665		ug/L		66	60 - 140
Resorcinol	350		1000	1380		ug/L		103	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	934		ug/L		93	10 - 110

Lab Sample ID: 180-39575-17 MS — **Client Sample ID: SG-1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	81		1000	1160		ug/L		108	60 - 140
p-Phenolsulfonic acid	ND		1000	1200		ug/L		120	60 - 140
Benzenesulfonic acid	ND		1000	667		ug/L		67	60 - 140
Resorcinol	ND		1000	979		ug/L		98	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1020		ug/L		102	10 - 110

Method: In-House - Sulfonic Acids by LCMS/MS (Continued)

Lab Sample ID: 180-39575-18 MS — **Client Sample ID: SG-6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	81		1000	1120		ug/L		104	60 - 140
p-Phenolsulfonic acid	ND		1000	1290		ug/L		129	60 - 140
Benzenesulfonic acid	ND		1000	662		ug/L		66	60 - 140
Resorcinol	ND		1000	990		ug/L		99	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	924		ug/L		92	10 - 110

Lab Sample ID: 180-39575-19 MS — **Client Sample ID: SW-2_LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	86		1000	1160		ug/L		108	60 - 140
p-Phenolsulfonic acid	ND		1000	1140		ug/L		114	60 - 140
Benzenesulfonic acid	ND		1000	666		ug/L		67	60 - 140
Resorcinol	ND		1000	1010		ug/L		101	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	932		ug/L		93	10 - 110

Lab Sample ID: 180-39575-20 MS — **Client Sample ID: SW-1_LANGAN**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	81		1000	1120		ug/L		103	60 - 140
p-Phenolsulfonic acid	ND		1000	1180		ug/L		118	60 - 140
Benzenesulfonic acid	ND		1000	652		ug/L		65	60 - 140
Resorcinol	ND		1000	964		ug/L		96	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	939		ug/L		94	10 - 110

Lab Sample ID: 180-39575-21 MS — **Client Sample ID: FB120414**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 81886 — **Prep Batch: 81835**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Benzenedisulfonic acid	ND		1000	949		ug/L		95	60 - 140
p-Phenolsulfonic acid	ND		1000	1060		ug/L		106	60 - 140
Benzenesulfonic acid	ND		1000	908		ug/L		91	60 - 140
Resorcinol	ND		1000	973		ug/L		97	60 - 140
2,3',4-Trihydroxydiphenyl	ND		1000	1020		ug/L		102	10 - 110

Method: 2540G - SM 2540G

Lab Sample ID: 180-39575-4 DU — **Client Sample ID: SED-102**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 127602

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	27		29		%		7	20
Percent Solids	73		71		%		3	20

GC/MS VOA

Analysis Batch: 127750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	8260B	127772
180-39575-4	SED-102	Total/NA	Solid	8260B	127772
180-39575-4 MS	SED-102	Total/NA	Solid	8260B	127772
180-39575-4 MSD	SED-102	Total/NA	Solid	8260B	127772
180-39575-6	SED-101	Total/NA	Solid	8260B	127772
180-39575-7	DUP120314	Total/NA	Solid	8260B	127772
LCS 180-127772/2-A	Lab Control Sample	Total/NA	Solid	8260B	127772
MB 180-127772/1-A	Method Blank	Total/NA	Solid	8260B	127772

Prep Batch: 127772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	5030B	
180-39575-4	SED-102	Total/NA	Solid	5030B	
180-39575-4 MS	SED-102	Total/NA	Solid	5030B	
180-39575-4 MSD	SED-102	Total/NA	Solid	5030B	
180-39575-6	SED-101	Total/NA	Solid	5030B	
180-39575-7	DUP120314	Total/NA	Solid	5030B	
LCS 180-127772/2-A	Lab Control Sample	Total/NA	Solid	5030B	
MB 180-127772/1-A	Method Blank	Total/NA	Solid	5030B	

Analysis Batch: 128326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-10	SG-4	Total/NA	Water	8260C	
180-39575-10 MS	SG-4	Total/NA	Water	8260C	
180-39575-10 MSD	SG-4	Total/NA	Water	8260C	
180-39575-22	TRIP BLANK	Total/NA	Water	8260C	
LCS 180-128326/10	Lab Control Sample	Total/NA	Water	8260C	
MB 180-128326/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 128456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-16	SH-1	Total/NA	Water	8260C	
180-39575-17	SG-1	Total/NA	Water	8260C	
180-39575-18	SG-6	Total/NA	Water	8260C	
180-39575-19	SW-2_LANGAN	Total/NA	Water	8260C	
180-39575-20	SW-1_LANGAN	Total/NA	Water	8260C	
LCS 180-128456/10	Lab Control Sample	Total/NA	Water	8260C	
MB 180-128456/7	Method Blank	Total/NA	Water	8260C	

Analysis Batch: 128468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	8260C	
180-39575-1 MS	SW-5_LANGAN	Total/NA	Water	8260C	
180-39575-1 MSD	SW-5_LANGAN	Total/NA	Water	8260C	
180-39575-3	SW-4_LANGAN	Total/NA	Water	8260C	
180-39575-5	SW-3_LANGAN	Total/NA	Water	8260C	
180-39575-8	SG-7	Total/NA	Water	8260C	
180-39575-9	SG-5	Total/NA	Water	8260C	
180-39575-11	SG-3	Total/NA	Water	8260C	
180-39575-12	DUP120414	Total/NA	Water	8260C	
180-39575-13	SG-8	Total/NA	Water	8260C	

GC/MS VOA (Continued)

Analysis Batch: 128468 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-14	SW-1	Total/NA	Water	8260C	
180-39575-15	SG-2	Total/NA	Water	8260C	
180-39575-21	FB120414	Total/NA	Water	8260C	
LCS 180-128468/8	Lab Control Sample	Total/NA	Water	8260C	
MB 180-128468/5	Method Blank	Total/NA	Water	8260C	

GC/MS Semi VOA

Prep Batch: 127659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	3520C	
180-39575-3	SW-4_LANGAN	Total/NA	Water	3520C	
180-39575-5	SW-3_LANGAN	Total/NA	Water	3520C	
180-39575-8	SG-7	Total/NA	Water	3520C	
180-39575-9	SG-5	Total/NA	Water	3520C	
LCS 180-127659/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 180-127659/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 180-127659/1-A	Method Blank	Total/NA	Water	3520C	

Prep Batch: 127798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-10	SG-4	Total/NA	Water	3520C	
180-39575-10 MS	SG-4	Total/NA	Water	3520C	
180-39575-10 MSD	SG-4	Total/NA	Water	3520C	
180-39575-11	SG-3	Total/NA	Water	3520C	
180-39575-12	DUP120414	Total/NA	Water	3520C	
180-39575-13	SG-8	Total/NA	Water	3520C	
180-39575-14	SW-1	Total/NA	Water	3520C	
180-39575-15	SG-2	Total/NA	Water	3520C	
180-39575-16	SH-1	Total/NA	Water	3520C	
180-39575-17	SG-1	Total/NA	Water	3520C	
180-39575-18	SG-6	Total/NA	Water	3520C	
180-39575-19	SW-2_LANGAN	Total/NA	Water	3520C	
180-39575-20	SW-1_LANGAN	Total/NA	Water	3520C	
180-39575-21	FB120414	Total/NA	Water	3520C	
LCS 180-127798/2-A	Lab Control Sample	Total/NA	Water	3520C	
MB 180-127798/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 127827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	8270C LL	127659
180-39575-3	SW-4_LANGAN	Total/NA	Water	8270C LL	127659
180-39575-5	SW-3_LANGAN	Total/NA	Water	8270C LL	127659
180-39575-8	SG-7	Total/NA	Water	8270C LL	127659
180-39575-9	SG-5	Total/NA	Water	8270C LL	127659
LCS 180-127659/2-A	Lab Control Sample	Total/NA	Water	8270C LL	127659
LCSD 180-127659/3-A	Lab Control Sample Dup	Total/NA	Water	8270C LL	127659
MB 180-127659/1-A	Method Blank	Total/NA	Water	8270C LL	127659

GC/MS Semi VOA (Continued)

Analysis Batch: 128007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-10	SG-4	Total/NA	Water	8270C LL	127798
180-39575-10 MS	SG-4	Total/NA	Water	8270C LL	127798
180-39575-10 MSD	SG-4	Total/NA	Water	8270C LL	127798
180-39575-11	SG-3	Total/NA	Water	8270C LL	127798
180-39575-12	DUP120414	Total/NA	Water	8270C LL	127798
180-39575-13	SG-8	Total/NA	Water	8270C LL	127798
180-39575-14	SW-1	Total/NA	Water	8270C LL	127798
180-39575-15	SG-2	Total/NA	Water	8270C LL	127798
180-39575-16	SH-1	Total/NA	Water	8270C LL	127798
180-39575-17	SG-1	Total/NA	Water	8270C LL	127798
180-39575-18	SG-6	Total/NA	Water	8270C LL	127798
180-39575-19	SW-2_LANGAN	Total/NA	Water	8270C LL	127798
180-39575-20	SW-1_LANGAN	Total/NA	Water	8270C LL	127798
180-39575-21	FB120414	Total/NA	Water	8270C LL	127798
LCS 180-127798/2-A	Lab Control Sample	Total/NA	Water	8270C LL	127798
MB 180-127798/1-A	Method Blank	Total/NA	Water	8270C LL	127798

HPLC/IC

Prep Batch: 113508

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	8315_W_Prep	
180-39575-3	SW-4_LANGAN	Total/NA	Water	8315_W_Prep	
180-39575-5	SW-3_LANGAN	Total/NA	Water	8315_W_Prep	
180-39575-8	SG-7	Total/NA	Water	8315_W_Prep	
180-39575-9	SG-5	Total/NA	Water	8315_W_Prep	
180-39575-10	SG-4	Total/NA	Water	8315_W_Prep	
180-39575-10 MS	SG-4	Total/NA	Water	8315_W_Prep	
180-39575-10 MSD	SG-4	Total/NA	Water	8315_W_Prep	
180-39575-11	SG-3	Total/NA	Water	8315_W_Prep	
180-39575-12	DUP120414	Total/NA	Water	8315_W_Prep	
180-39575-13	SG-8	Total/NA	Water	8315_W_Prep	
180-39575-14	SW-1	Total/NA	Water	8315_W_Prep	
180-39575-15	SG-2	Total/NA	Water	8315_W_Prep	
180-39575-16	SH-1	Total/NA	Water	8315_W_Prep	
180-39575-17	SG-1	Total/NA	Water	8315_W_Prep	
180-39575-18	SG-6	Total/NA	Water	8315_W_Prep	
180-39575-19	SW-2_LANGAN	Total/NA	Water	8315_W_Prep	
180-39575-20	SW-1_LANGAN	Total/NA	Water	8315_W_Prep	
180-39575-21	FB120414	Total/NA	Water	8315_W_Prep	
LCS 640-113508/2-A	Lab Control Sample	Total/NA	Water	8315_W_Prep	
LCSD 640-113508/3-A	Lab Control Sample Dup	Total/NA	Water	8315_W_Prep	
MB 640-113508/1-A	Method Blank	Total/NA	Water	8315_W_Prep	

Prep Batch: 113540

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	8315_S_Prep	
180-39575-4	SED-102	Total/NA	Solid	8315_S_Prep	
180-39575-4 MS	SED-102	Total/NA	Solid	8315_S_Prep	
180-39575-4 MSD	SED-102	Total/NA	Solid	8315_S_Prep	

HPLC/IC (Continued)

Prep Batch: 113540 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-6	SED-101	Total/NA	Solid	8315_S_Prep	
180-39575-7	DUP120314	Total/NA	Solid	8315_S_Prep	
LCS 640-113540/2-A	Lab Control Sample	Total/NA	Solid	8315_S_Prep	
LCSD 640-113540/3-A	Lab Control Sample Dup	Total/NA	Solid	8315_S_Prep	
MB 640-113540/1-A	Method Blank	Total/NA	Solid	8315_S_Prep	

Analysis Batch: 113556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	8315A	113508
180-39575-3	SW-4_LANGAN	Total/NA	Water	8315A	113508
180-39575-5	SW-3_LANGAN	Total/NA	Water	8315A	113508
180-39575-8	SG-7	Total/NA	Water	8315A	113508
180-39575-9	SG-5	Total/NA	Water	8315A	113508
180-39575-10	SG-4	Total/NA	Water	8315A	113508
180-39575-10 MS	SG-4	Total/NA	Water	8315A	113508
180-39575-10 MSD	SG-4	Total/NA	Water	8315A	113508
180-39575-11	SG-3	Total/NA	Water	8315A	113508
180-39575-12	DUP120414	Total/NA	Water	8315A	113508
180-39575-13	SG-8	Total/NA	Water	8315A	113508
180-39575-14	SW-1	Total/NA	Water	8315A	113508
180-39575-15	SG-2	Total/NA	Water	8315A	113508
180-39575-16	SH-1	Total/NA	Water	8315A	113508
180-39575-17	SG-1	Total/NA	Water	8315A	113508
180-39575-18	SG-6	Total/NA	Water	8315A	113508
180-39575-19	SW-2_LANGAN	Total/NA	Water	8315A	113508
180-39575-20	SW-1_LANGAN	Total/NA	Water	8315A	113508
180-39575-21	FB120414	Total/NA	Water	8315A	113508
LCS 640-113508/2-A	Lab Control Sample	Total/NA	Water	8315A	113508
LCSD 640-113508/3-A	Lab Control Sample Dup	Total/NA	Water	8315A	113508
MB 640-113508/1-A	Method Blank	Total/NA	Water	8315A	113508

Analysis Batch: 113605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	8315A	113540
180-39575-4	SED-102	Total/NA	Solid	8315A	113540
180-39575-4 MS	SED-102	Total/NA	Solid	8315A	113540
180-39575-4 MSD	SED-102	Total/NA	Solid	8315A	113540
180-39575-6	SED-101	Total/NA	Solid	8315A	113540
180-39575-7	DUP120314	Total/NA	Solid	8315A	113540
LCS 640-113540/2-A	Lab Control Sample	Total/NA	Solid	8315A	113540
LCSD 640-113540/3-A	Lab Control Sample Dup	Total/NA	Solid	8315A	113540
MB 640-113540/1-A	Method Blank	Total/NA	Solid	8315A	113540

Analysis Batch: 128954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	300.0	
180-39575-3	SW-4_LANGAN	Total/NA	Water	300.0	
180-39575-5	SW-3_LANGAN	Total/NA	Water	300.0	
180-39575-9	SG-5	Total/NA	Water	300.0	
180-39575-11	SG-3	Total/NA	Water	300.0	
180-39575-12	DUP120414	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 128954 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-13	SG-8	Total/NA	Water	300.0	
180-39575-14	SW-1	Total/NA	Water	300.0	
LCS 180-128954/16	Lab Control Sample	Total/NA	Water	300.0	
MB 180-128954/17	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 129078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-8	SG-7	Total/NA	Water	300.0	
180-39575-10	SG-4	Total/NA	Water	300.0	
180-39575-10 MS	SG-4	Total/NA	Water	300.0	
180-39575-10 MSD	SG-4	Total/NA	Water	300.0	
180-39575-15	SG-2	Total/NA	Water	300.0	
180-39575-16	SH-1	Total/NA	Water	300.0	
180-39575-17	SG-1	Total/NA	Water	300.0	
180-39575-18	SG-6	Total/NA	Water	300.0	
180-39575-19	SW-2_LANGAN	Total/NA	Water	300.0	
180-39575-20	SW-1_LANGAN	Total/NA	Water	300.0	
180-39575-21	FB120414	Total/NA	Water	300.0	
LCS 180-129078/5	Lab Control Sample	Total/NA	Water	300.0	
MB 180-129078/6	Method Blank	Total/NA	Water	300.0	

Leach Batch: 129253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Soluble	Solid	DI Leach	
180-39575-4	SED-102	Soluble	Solid	DI Leach	
180-39575-4 MS	SED-102	Soluble	Solid	DI Leach	
180-39575-4 MSD	SED-102	Soluble	Solid	DI Leach	
180-39575-6	SED-101	Soluble	Solid	DI Leach	
180-39575-7	DUP120314	Soluble	Solid	DI Leach	
LB3 180-129253/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 180-129253/2-A	Lab Control Sample	Soluble	Solid	DI Leach	

Analysis Batch: 129332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Soluble	Solid	300.0	129253
180-39575-4	SED-102	Soluble	Solid	300.0	129253
180-39575-4 MS	SED-102	Soluble	Solid	300.0	129253
180-39575-4 MSD	SED-102	Soluble	Solid	300.0	129253
LB3 180-129253/1-A	Method Blank	Soluble	Solid	300.0	129253
LCS 180-129253/2-A	Lab Control Sample	Soluble	Solid	300.0	129253

Analysis Batch: 129476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-6	SED-101	Soluble	Solid	300.0	129253
180-39575-7	DUP120314	Soluble	Solid	300.0	129253
LB3 180-129253/1-A	Method Blank	Soluble	Solid	300.0	129253
LCS 180-129253/2-A	Lab Control Sample	Soluble	Solid	300.0	129253

LCMS

Prep Batch: 81831

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	In House	
180-39575-2 MS	SED-103	Total/NA	Solid	In House	
180-39575-4	SED-102	Total/NA	Solid	In House	
180-39575-4 MS	SED-102	Total/NA	Solid	In House	
180-39575-4 MSD	SED-102	Total/NA	Solid	In House	
180-39575-6	SED-101	Total/NA	Solid	In House	
180-39575-6 MS	SED-101	Total/NA	Solid	In House	
180-39575-7	DUP120314	Total/NA	Solid	In House	
180-39575-7 MS	DUP120314	Total/NA	Solid	In House	
LCS 200-81831/3-A	Lab Control Sample	Total/NA	Solid	In House	
LLCS 200-81831/2-A	Lab Control Sample	Total/NA	Solid	In House	
MB 200-81831/1-A	Method Blank	Total/NA	Solid	In House	

Prep Batch: 81835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	In House	
180-39575-1 MS	SW-5_LANGAN	Total/NA	Water	In House	
180-39575-3	SW-4_LANGAN	Total/NA	Water	In House	
180-39575-3 MS	SW-4_LANGAN	Total/NA	Water	In House	
180-39575-5	SW-3_LANGAN	Total/NA	Water	In House	
180-39575-5 MS	SW-3_LANGAN	Total/NA	Water	In House	
180-39575-8	SG-7	Total/NA	Water	In House	
180-39575-8 MS	SG-7	Total/NA	Water	In House	
180-39575-9	SG-5	Total/NA	Water	In House	
180-39575-9 MS	SG-5	Total/NA	Water	In House	
180-39575-10	SG-4	Total/NA	Water	In House	
180-39575-10 MS	SG-4	Total/NA	Water	In House	
180-39575-10 MSD	SG-4	Total/NA	Water	In House	
180-39575-11	SG-3	Total/NA	Water	In House	
180-39575-11 MS	SG-3	Total/NA	Water	In House	
180-39575-12	DUP120414	Total/NA	Water	In House	
180-39575-12 MS	DUP120414	Total/NA	Water	In House	
180-39575-13	SG-8	Total/NA	Water	In House	
180-39575-13 MS	SG-8	Total/NA	Water	In House	
180-39575-14	SW-1	Total/NA	Water	In House	
180-39575-14 MS	SW-1	Total/NA	Water	In House	
180-39575-15	SG-2	Total/NA	Water	In House	
180-39575-15 MS	SG-2	Total/NA	Water	In House	
180-39575-16	SH-1	Total/NA	Water	In House	
180-39575-16 MS	SH-1	Total/NA	Water	In House	
180-39575-17	SG-1	Total/NA	Water	In House	
180-39575-17 MS	SG-1	Total/NA	Water	In House	
180-39575-18	SG-6	Total/NA	Water	In House	
180-39575-18 MS	SG-6	Total/NA	Water	In House	
180-39575-19	SW-2_LANGAN	Total/NA	Water	In House	
180-39575-19 MS	SW-2_LANGAN	Total/NA	Water	In House	
180-39575-20	SW-1_LANGAN	Total/NA	Water	In House	
180-39575-20 MS	SW-1_LANGAN	Total/NA	Water	In House	
180-39575-21	FB120414	Total/NA	Water	In House	
180-39575-21 MS	FB120414	Total/NA	Water	In House	
LCS 200-81835/3-A	Lab Control Sample	Total/NA	Water	In House	

LCMS (Continued)

Prep Batch: 81835 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LLCS 200-81835/2-A	Lab Control Sample	Total/NA	Water	In House	
MB 200-81835/1-A	Method Blank	Total/NA	Water	In House	

Analysis Batch: 81860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	In-House	81831
180-39575-2	SED-103	Total/NA	Solid	In-House	81831
180-39575-2 MS	SED-103	Total/NA	Solid	In-House	81831
180-39575-2 MS	SED-103	Total/NA	Solid	In-House	81831
180-39575-4	SED-102	Total/NA	Solid	In-House	81831
180-39575-4	SED-102	Total/NA	Solid	In-House	81831
180-39575-4 MS	SED-102	Total/NA	Solid	In-House	81831
180-39575-4 MS	SED-102	Total/NA	Solid	In-House	81831
180-39575-4 MSD	SED-102	Total/NA	Solid	In-House	81831
180-39575-4 MSD	SED-102	Total/NA	Solid	In-House	81831
180-39575-6	SED-101	Total/NA	Solid	In-House	81831
180-39575-6	SED-101	Total/NA	Solid	In-House	81831
180-39575-6 MS	SED-101	Total/NA	Solid	In-House	81831
180-39575-7	DUP120314	Total/NA	Solid	In-House	81831
180-39575-7	DUP120314	Total/NA	Solid	In-House	81831
180-39575-7 MS	DUP120314	Total/NA	Solid	In-House	81831
LCS 200-81831/3-A	Lab Control Sample	Total/NA	Solid	In-House	81831
LLCS 200-81831/2-A	Lab Control Sample	Total/NA	Solid	In-House	81831
MB 200-81831/1-A	Method Blank	Total/NA	Solid	In-House	81831

Analysis Batch: 81886

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-1	SW-5_LANGAN	Total/NA	Water	In-House	81835
180-39575-1 MS	SW-5_LANGAN	Total/NA	Water	In-House	81835
180-39575-3	SW-4_LANGAN	Total/NA	Water	In-House	81835
180-39575-3 MS	SW-4_LANGAN	Total/NA	Water	In-House	81835
180-39575-5	SW-3_LANGAN	Total/NA	Water	In-House	81835
180-39575-5 MS	SW-3_LANGAN	Total/NA	Water	In-House	81835
180-39575-8	SG-7	Total/NA	Water	In-House	81835
180-39575-8 MS	SG-7	Total/NA	Water	In-House	81835
180-39575-9	SG-5	Total/NA	Water	In-House	81835
180-39575-9 MS	SG-5	Total/NA	Water	In-House	81835
180-39575-10	SG-4	Total/NA	Water	In-House	81835
180-39575-10 MS	SG-4	Total/NA	Water	In-House	81835
180-39575-10 MSD	SG-4	Total/NA	Water	In-House	81835
180-39575-11	SG-3	Total/NA	Water	In-House	81835
180-39575-11 MS	SG-3	Total/NA	Water	In-House	81835
180-39575-12	DUP120414	Total/NA	Water	In-House	81835
180-39575-12 MS	DUP120414	Total/NA	Water	In-House	81835
180-39575-13	SG-8	Total/NA	Water	In-House	81835
180-39575-13 MS	SG-8	Total/NA	Water	In-House	81835
180-39575-14	SW-1	Total/NA	Water	In-House	81835
180-39575-14 MS	SW-1	Total/NA	Water	In-House	81835
180-39575-15	SG-2	Total/NA	Water	In-House	81835
180-39575-15 MS	SG-2	Total/NA	Water	In-House	81835
180-39575-16	SH-1	Total/NA	Water	In-House	81835

LCMS (Continued)

Analysis Batch: 81886 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-16 MS	SH-1	Total/NA	Water	In-House	81835
180-39575-17	SG-1	Total/NA	Water	In-House	81835
180-39575-17 MS	SG-1	Total/NA	Water	In-House	81835
180-39575-18	SG-6	Total/NA	Water	In-House	81835
180-39575-18 MS	SG-6	Total/NA	Water	In-House	81835
180-39575-19	SW-2_LANGAN	Total/NA	Water	In-House	81835
180-39575-19 MS	SW-2_LANGAN	Total/NA	Water	In-House	81835
180-39575-20	SW-1_LANGAN	Total/NA	Water	In-House	81835
180-39575-20 MS	SW-1_LANGAN	Total/NA	Water	In-House	81835
180-39575-21	FB120414	Total/NA	Water	In-House	81835
180-39575-21 MS	FB120414	Total/NA	Water	In-House	81835
LCS 200-81835/3-A	Lab Control Sample	Total/NA	Water	In-House	81835
LLCS 200-81835/2-A	Lab Control Sample	Total/NA	Water	In-House	81835
MB 200-81835/1-A	Method Blank	Total/NA	Water	In-House	81835

General Chemistry

Analysis Batch: 127602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-39575-2	SED-103	Total/NA	Solid	2540G	
180-39575-4	SED-102	Total/NA	Solid	2540G	
180-39575-4 DU	SED-102	Total/NA	Solid	2540G	
180-39575-6	SED-101	Total/NA	Solid	2540G	
180-39575-7	DUP120314	Total/NA	Solid	2540G	

TestAmerica Pittsburgh

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Chain of Custody Record

063926

TestAmerica
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TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks			Lab Sampling:
Project Name: Indspec - petrolia	☐ 1 week ☐ 2 days Standard ☐ 1 day			Job / SDG No.:
Site:				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	Phenol (8270) ms/msd	Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X	
Sed-103	12/3/14	1100	C	sed	3				X	X	
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X	
Sed-102	12/3/14	1120	C	sed	9		Y		X	X X	
SW-3-Langan	12/3/14	1140	G	W	6			X	X	X	
Sed-101	12/3/14	1200	C	sed	3				X	X	
Dup120314	12/3/14	—	C	sed	3				X	X	
SG-7	12/3/14	1220	G	W	6			X	X	X	
SG-5	12/3/14	1235	G	W	6			X	X	X	
SG-4	12/4/14	0955	G	W	18		Y	X	X	X X	
SG-3	12/4/14	1020	G	W	6			X	X	X	
Dup120414	12/4/14	—	G	W	6			X	X	X	

180-39575 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12-4-14/1745		TAL	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berton	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days Standard ☐ 1 day			Lab Sampling:
Project Name: Indspec - Petrolia PA				Job / SDG No.:
Site:				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12.4.14	1045	G	W	6			X	X	X	
SW-1	12.4.14	1055	G	W	6			X	X	X	
SG-2	12.4.14	1115	G	W	6			X	X	X	
SH-1	12.4.14	1130	G	W	6			X	X	X	
SG-1	12.4.14	1140	G	W	6			X	X	X	
SG-6	12.4.14	1300	G	W	6			X	X	X	
SW-2_Langan	12.4.14	1310	G	W	6			X	X	X	
SW-1_Langan	12.4.14	1320	G	W	6			X	X	X	
FB120414	12.4.14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____		
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12.4.14/1745	Received by:	Company: TAlright	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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Rev. 2/3/2014

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Chain of Custody Record

063926

TestAmerica
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TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Harnish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day Standard			Lab Sampling:
Project Name: Indspec - petrotra				Job / SDG No.:
Site:				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	Phenol (8270) ms/msd			Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X			
Sed-103	12/3/14	1100	C	sed	3				X	X			
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X			
Sed-102	12/3/14	1120	C	sed	9		Y		X	X	X		
SW-3_Langan	12/3/14	1140	G	W	6			X	X	X			
Sed-101	12/3/14	1200	C	sed	3				X	X			
Dup120314	12/3/14	—	C	sed	3				X	X			
SG-7	12/3/14	1220	G	W	6			X	X	X			
SG-5	12/3/14	1235	G	W	6			X	X	X			
SG-4	12/4/14	0955	G	W	18		Y	X	X	X	X		
SG-3	12/4/14	1020	G	W	6			X	X	X			
Dup120414	12/4/14	—	G	W	6			X	X	X			

180-39575 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12-4-14/1745		TAL PGH	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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12/3/2014

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Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Boria	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day Standard			Lab Sampling:
Project Name: Indspec - petrolia PA				Job / SDG No.:
Site:				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12-4-14	1045	G	W	6			X	X	X	
SW-1	12-4-14	1055	G	W	6			X	X	X	
SG-2	12-4-14	1115	G	W	6			X	X	X	
H-1	12-4-14	1130	G	W	6			X	X	X	
SG-1	12-4-14	1140	G	W	6			X	X	X	
SG-6	12-4-14	1300	G	W	6			X	X	X	
SW-2_Langan	12-4-14	1310	G	W	6			X	X	X	
SW-1_Langan	12-4-14	1320	G	W	6			X	X	X	
FB120414	12-4-14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

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Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14/1745	Received by:	Company: Tkright	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

12/23/2014

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Chain of Custody Record

063924

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TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Harnish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berta	Carrier: Fedex	1 of 1 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week Standard ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: INDSPEC, Petrolia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260B - project VOA	MS/MSD	Sample Specific Notes:
Sed-103	12/4/14	1100	C	sed	3		N	X		Hold
Sed-102	12/4/14	1120	C	sed	9		Y	X	X	Hold
Sed-101	12/4/14	1200	C	sed	3		N	X		Hold
Dup120314	12/4/14	—	C	sed	3		N	X		Hold

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____			
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14/1745	Received by:	Company: TAPT	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

12/3/2014

Plastic 250 Amber

Chain of Custody Record

TestAmerica Laboratory location: Burlington

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other _____

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager:	Site Contact:	Lab Contact:	COC No:
Company Name: Arcadis	Mark Hanish	Chris Bonessi	V Bertot / Kathrine Kelly	
Address: 6041 Wallace Rd Ext suite 300	Telephone: 724 742 9180	Telephone: 724 312 2021	Telephone:	2 of 2 COCs
City/State/Zip: Wexford PA 15090	Email: Mark.Hanish@arcadis-us.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 724 742 9180		TAT if different from below ☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day Standard		Walk-in client: ☐ Lab sampling: ☐ Job/SDG No:
Project Name: Indspec - Petrolia PA	Method of Shipment/Carrier: Fedex			
Project Number:	Shipping/Tracking No:			
PO#				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other: Amber	Filtered Sample (Y/N)	Containers for Grav-E	Sulfonic Acids	Sample Specific Notes / Special Instructions:
SG-8	12/4/14	1045		X										X		G	X	
SW-1	12/4/14	1055		X										X		G	X	
SG-2	12/4/14	1115		X										X		G	X	
SH-1	12/4/14	1130		X										X		G	X	
SG-1	12/4/14	1140		X										X		G	X	
SG-6	12/4/14	1300		X										X		G	X	
SW-2_Langan	12/4/14	1310		X										X		G	X	
SW-1_Langan	12/4/14	1320		X										X		G	X	
FB120414	12/4/14	1440		X										X		G	X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12.4.14 / 1745		TABTV	12/5/14 945
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL-0018 (1008)

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Chain of Custody Record

063926

TestAmerica
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TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Borton	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day Standard			Lab Sampling:
Project Name: Indspec - petrotia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	Phenol (8270) ms/msd	Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X	
Sed-103	12/3/14	1100	C	sed	3				X	X	
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X	
Sed-102	12/3/14	1120	C	sed	9		Y		X	X X	
SW-3_Langan	12/3/14	1140	G	W	6			X	X	X	
Sed-101	12/3/14	1200	C	sed	3				X	X	
Dup120314	12/3/14	—	C	sed	3				X	X	
SG-7	12/3/14	1220	G	W	6			X	X	X	
SG-5	12/3/14	1235	G	W	6			X	X	X	
SG-4	12/4/14	0955	G	W	18		Y	X	X	X X	
SG-3	12/4/14	1020	G	W	6			X	X	X	
Dup120414	12/4/14	—	G	W	6			X	X	X	

180-39575 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
C Bonessi	Arcadis	12-4-14/1745		TKQH	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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12/23/2014

TestAmerica Pittsburgh

301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Boris	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days Standard ☐ 1 day			Lab Sampling:
Project Name: Indspec - Petrolia PA				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12-4-14	1045	G	W	6			X	X	X	
SW-1	12-4-14	1055	G	W	6			X	X	X	
SG-2	12-4-14	1115	G	W	6			X	X	X	
SH-1	12-4-14	1130	G	W	6			X	X	X	
SG-1	12-4-14	1140	G	W	6			X	X	X	
SG-6	12-4-14	1300	G	W	6			X	X	X	
SW-2_Langam	12-4-14	1310	G	W	6			X	X	X	
SW-1_Langam	12-4-14	1320	G	W	6			X	X	X	
FB120414	12-4-14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12.4.14/1745		TAKgHT	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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12/05/2014

TestAmerica Pittsburgh

301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2478

Chain of Custody Record

063924

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hannish	Site Contact: Chris Bonessi	Date: 12.4.14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berta	Carrier: Fedex	1 of 1 COCs
Address: 6041 Wallace, Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week Standard ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: INDSPEC, Petrolia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260B - project VOA	MS/MSD	Sample Specific Notes:
Sed-103	12/4/14	1100	C	Sed	3	N	Y	X		Hold
Sed-102	12/4/14	1120	C	Sed	9	N	Y	X	X	Hold
Sed-101	12/4/14	1200	C	Sed	3	N	Y	X		Hold
Dup120314	12/4/14	—	C	Sed	3	N	Y	X		Hold

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12-4-14/1745		TAPyt	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

2/3/2015

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-39575-1

Login Number: 39575

List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Kovitch, Christina M

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-39575-1

Login Number: 39575
List Number: 2
Creator: Goodrich, Kenneth L

List Source: TestAmerica Burlington
List Creation: 12/08/14 09:38 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	-32.8ºC IR GUN 181, CF 0.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-39575-1

Login Number: 39575
List Number: 3
Creator: Goodrich, Kenneth L

List Source: TestAmerica Burlington
List Creation: 12/08/14 12:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	-32.8ºC IR GUN 181, CF 0.0
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh, PA 15238
Tel: (412)963-7058

TestAmerica Job ID: 180-40884-1
Client Project/Site: INDSPEC, Petrolia PA

For:
ARCADIS U.S. Inc
6041 Wallace Road Extension
Suite 300
Wexford, Pennsylvania 15090

Attn: Chris Bonessi

Veronica Bortot

Authorized for release by:
2/5/2015 2:40:03 PM

Veronica Bortot, Senior Project Manager
(412)963-2435
veronica.bortot@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Job ID: 180-40884-1

Laboratory: TestAmerica Pittsburgh

Narrative

Job Narrative
180-40884-1

Comments
No additional comments.

Receipt
The samples were received on 1/30/2015 2:15 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2º C.

GC/MS Semi VOA
Method(s) 8270C LL: The following sample(s) was diluted due to the nature of the sample matrix : SED-101 (180-40884-1), SED-103 (180-40884-3 MS), SED-103 (180-40884-3 MSD). As such, surrogate recoverieswill be considered as estimated and elevated reporting limits (RLs) are provided.

Method(s) 8270C LL: The following sample(s) was diluted due to the nature of the sample matrix and based upon screen of : SED-103 (180-40884-3). As such, surrogate recoveries will be considered as estimated and elevated reporting limits (RLs) are provided.

Method(s) 8270C LL: The following sample(s) was diluted due to the nature of the sample matrix and based upon screen of the sample : DUP-012915 (180-40884-4), SED-102 (180-40884-2). As such, surrogate recoveries are below the calibration range or are not reported, and elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method(s) 3541: Due to the matrix, the following samples could not be concentrated to the final method required volume: DUP-012915 (180-40884-4), SED-102 (180-40884-2). The reporting limits (RLs) are elevated proportionately.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Laboratory: TestAmerica Pittsburgh

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Pennsylvania	NELAP	3	02-00416	04-30-15

Analysis Method	Prep Method	Matrix	Analyte

Sample Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-40884-1	SED-101	Sediment	01/29/15 14:50	01/30/15 14:15
180-40884-2	SED-102	Sediment	01/29/15 14:40	01/30/15 14:15
180-40884-3	SED-103	Sediment	01/29/15 14:30	01/30/15 14:15
180-40884-4	DUP-012915	Sediment	01/29/15 00:00	01/30/15 14:15

Method Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Method	Method Description	Protocol	Laboratory
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL PIT
2540G	SM 2540G	SM22	TAL PIT

Protocol References:

SM22 = SM22

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Lab Chronicle

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Client Sample ID: SED-101

Lab Sample ID: 180-40884-1

Date Collected: 01/29/15 14:50
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			30.0 g	0.5 mL	132304	02/02/15 02:45	KLG	TAL PIT
Total/NA	Analysis	8270C LL		10	30.0 g	0.5 mL	132422	02/03/15 09:32	SAB	TAL PIT
	Instrument ID: CH722									
Total/NA	Analysis	2540G		1			132262	01/30/15 15:55	NAK	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SED-102

Lab Sample ID: 180-40884-2

Date Collected: 01/29/15 14:40
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			30.2 g	1.0 mL	132304	02/02/15 02:45	KLG	TAL PIT
Total/NA	Analysis	8270C LL		20	30.2 g	1.0 mL	132546	02/04/15 06:37	FBB	TAL PIT
	Instrument ID: CH722									
Total/NA	Analysis	2540G		1			132262	01/30/15 15:55	NAK	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: SED-103

Lab Sample ID: 180-40884-3

Date Collected: 01/29/15 14:30
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			30.1 g	0.5 mL	132304	02/02/15 02:45	KLG	TAL PIT
Total/NA	Analysis	8270C LL		10	30.1 g	0.5 mL	132546	02/04/15 07:05	FBB	TAL PIT
	Instrument ID: CH722									
Total/NA	Analysis	2540G		1			132262	01/30/15 15:55	NAK	TAL PIT
	Instrument ID: NOEQUIP									

Client Sample ID: DUP-012915

Lab Sample ID: 180-40884-4

Date Collected: 01/29/15 00:00
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 65.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3541			30.0 g	4.0 mL	132304	02/02/15 02:45	KLG	TAL PIT
Total/NA	Analysis	8270C LL		20	30.0 g	4.0 mL	132546	02/04/15 07:33	FBB	TAL PIT
	Instrument ID: CH722									
Total/NA	Analysis	2540G		1			132262	01/30/15 15:55	NAK	TAL PIT
	Instrument ID: NOEQUIP									

Laboratory References:

TAL PIT = TestAmerica Pittsburgh, 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238, TEL (412)963-7058

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Analyst References:

Lab: TAL PIT

Batch Type: Prep

KLG = Kevin Geehring

Batch Type: Analysis

FBB = Frank Bungard

NAK = Neil Klingman

SAB = Sharon Bacha

Client Sample ID: SED-101

Lab Sample ID: 180-40884-1
Date Collected: 01/29/15 14:50
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.2

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		42	5.0	ug/Kg	☼	02/02/15 02:45	02/03/15 09:32	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*95*		*33 - 110*	*02/02/15 02:45*	*02/03/15 09:32*	*10*
2-Fluorophenol	*69*		*33 - 100*	*02/02/15 02:45*	*02/03/15 09:32*	*10*
Phenol-d5	*88*		*37 - 100*	*02/02/15 02:45*	*02/03/15 09:32*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21**		0.10	0.10	%			01/30/15 15:55	1
Percent Solids	**79**		0.10	0.10	%			01/30/15 15:55	1

Client Sample ID: SED-102

Lab Sample ID: 180-40884-2
Date Collected: 01/29/15 14:40
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.8

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		170	20	ug/Kg	☼	02/02/15 02:45	02/04/15 06:37	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*0*	*D X*	*33 - 110*	*02/02/15 02:45*	*02/04/15 06:37*	*20*
2-Fluorophenol	*0*	*D X*	*33 - 100*	*02/02/15 02:45*	*02/04/15 06:37*	*20*
Phenol-d5	*0*	*D X*	*37 - 100*	*02/02/15 02:45*	*02/04/15 06:37*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20**		0.10	0.10	%			01/30/15 15:55	1
Percent Solids	**80**		0.10	0.10	%			01/30/15 15:55	1

Client Sample ID: SED-103

Lab Sample ID: 180-40884-3
Date Collected: 01/29/15 14:30
Matrix: Sediment
Date Received: 01/30/15 14:15
Percent Solids: 79.5

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**10**	**J**	42	4.9	ug/Kg	☼	02/02/15 02:45	02/04/15 07:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*99*		*33 - 110*	*02/02/15 02:45*	*02/04/15 07:05*	*10*
2-Fluorophenol	*80*		*33 - 100*	*02/02/15 02:45*	*02/04/15 07:05*	*10*
Phenol-d5	*82*		*37 - 100*	*02/02/15 02:45*	*02/04/15 07:05*	*10*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**21**		0.10	0.10	%			01/30/15 15:55	1
Percent Solids	**79**		0.10	0.10	%			01/30/15 15:55	1

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Client Sample ID: DUP-012915
Date Collected: 01/29/15 00:00
Date Received: 01/30/15 14:15

Lab Sample ID: 180-40884-4
Matrix: Sediment
Percent Solids: 65.6

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		820	96	ug/Kg	☼	02/02/15 02:45	02/04/15 07:33	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*0*	*D X*	*33 - 110*	*02/02/15 02:45*	*02/04/15 07:33*	*20*
2-Fluorophenol	*0*	*D X*	*33 - 100*	*02/02/15 02:45*	*02/04/15 07:33*	*20*
Phenol-d5	*0*	*D X*	*37 - 100*	*02/02/15 02:45*	*02/04/15 07:33*	*20*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**34**		0.10	0.10	%			01/30/15 15:55	1
Percent Solids	**66**		0.10	0.10	%			01/30/15 15:55	1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 180-132304/1-A — **Client Sample ID: Method Blank**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 132422 — **Prep Batch: 132304**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		3.4	0.39	ug/Kg		02/02/15 02:45	02/03/15 00:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*52*		*33 - 110*	*02/02/15 02:45*	*02/03/15 00:36*	*1*
2-Fluorophenol	*70*		*33 - 100*	*02/02/15 02:45*	*02/03/15 00:36*	*1*
Phenol-d5	*73*		*37 - 100*	*02/02/15 02:45*	*02/03/15 00:36*	*1*

Lab Sample ID: LCS 180-132304/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 132422 — **Prep Batch: 132304**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Phenol			333	268		ug/Kg		81	34 - 100		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*69*		*33 - 110*
2-Fluorophenol	*75*		*33 - 100*
Phenol-d5	*78*		*37 - 100*

Lab Sample ID: 180-40884-3 MS — **Client Sample ID: SED-103**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 132422 — **Prep Batch: 132304**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Phenol	10	J	418	385		ug/Kg	☼	90	34 - 100		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2,4,6-Tribromophenol	*103*		*33 - 110*
2-Fluorophenol	*83*		*33 - 100*
Phenol-d5	*90*		*37 - 100*

Lab Sample ID: 180-40884-3 MSD — **Client Sample ID: SED-103**
Matrix: Sediment — **Prep Type: Total/NA**
Analysis Batch: 132422 — **Prep Batch: 132304**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	10	J	418	363		ug/Kg	☼	84	34 - 100	6	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*96*		*33 - 110*
2-Fluorophenol	*77*		*33 - 100*
Phenol-d5	*88*		*37 - 100*

QC Association Summary

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

GC/MS Semi VOA

Prep Batch: 132304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-40884-1	SED-101	Total/NA	Sediment	3541	
180-40884-2	SED-102	Total/NA	Sediment	3541	
180-40884-3	SED-103	Total/NA	Sediment	3541	
180-40884-3 MS	SED-103	Total/NA	Sediment	3541	
180-40884-3 MSD	SED-103	Total/NA	Sediment	3541	
180-40884-4	DUP-012915	Total/NA	Sediment	3541	
LCS 180-132304/2-A	Lab Control Sample	Total/NA	Sediment	3541	
MB 180-132304/1-A	Method Blank	Total/NA	Sediment	3541	

Analysis Batch: 132422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-40884-1	SED-101	Total/NA	Sediment	8270C LL	132304
180-40884-3 MS	SED-103	Total/NA	Sediment	8270C LL	132304
180-40884-3 MSD	SED-103	Total/NA	Sediment	8270C LL	132304
LCS 180-132304/2-A	Lab Control Sample	Total/NA	Sediment	8270C LL	132304
MB 180-132304/1-A	Method Blank	Total/NA	Sediment	8270C LL	132304

Analysis Batch: 132546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-40884-2	SED-102	Total/NA	Sediment	8270C LL	132304
180-40884-3	SED-103	Total/NA	Sediment	8270C LL	132304
180-40884-4	DUP-012915	Total/NA	Sediment	8270C LL	132304

General Chemistry

Analysis Batch: 132262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
180-40884-1	SED-101	Total/NA	Sediment	2540G	
180-40884-2	SED-102	Total/NA	Sediment	2540G	
180-40884-3	SED-103	Total/NA	Sediment	2540G	
180-40884-4	DUP-012915	Total/NA	Sediment	2540G	

TestAmerica Pittsburgh
301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

064406

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hamish	Site Contact: C Bonessi	Date: 1-29-15	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: V Bortot	Carrier: Fedex	1 of 1 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax:	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day — See below			Lab Sampling:
Project Name: Beazer Indspec				Job / SDG No.:
Site: Petrolia, PA				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Phenol (8270)			Sample Specific Notes:
SED-101	1-29-15	1450	C	Sed	1			X			
SED-102	1-29-15	1440	C	Sed	1			X			
SED-103	1-29-15	1430	C	Sed	3		X	X	X		3x vol for MS/MSD
Dup-012915	1-29-15	—	C	Sed	1			X			

Page 14 of 15

180-40884 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Talk to Veronica about TAT - would like to get these back in a week - this is a resample due to lab error

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: 2.2 Corr'd: 2.2 | Therm ID No.: 6

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
CJB	Arcadis	~~1-29-15~~ CJB		TA P.77	1/30/15 1300
Relinquished by: Chris Bonessi	Company:	Date/Time: 1-30-15/1340	Received by:	Company:	Date/Time:
Relinquished by:	Company: TA P.77	Date/Time: 1/30/15 1415	Received in Laboratory by:	Company: TAP	Date/Time: 1/30/15 1415

Login Sample Receipt Checklist

Client: ARCADIS U.S. Inc

Job Number: 180-40884-1

Login Number: 40884

List Source: TestAmerica Pittsburgh

List Number: 1

Creator: Neri, Tom

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Data Validation Summaries

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

INDSPEC Petrolia

Data Review

PETROLIA, PENNSYLVANIA

Semi-volatile analysis

SDG #: 180-40884

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, PA

Report #: 23159R
Review Level: Tier III
Project: B0039303.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-40884 for samples collected in association with the INDSPEC site in Petrolia, PA. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody.

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	GRO	DRO	MISC
SED-103	180-40884-3	Sediment	1/29/2015			X			
SED-102	180-40884-2	Sediment	1/29/2015			X			
SED-101	180-40884-1	Sediment	1/29/2015			X			
DUP-012915	180-40884-4	Sediment	1/29/2015	SED-102		X			

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Collection Technique (grab, composite, etc.)		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method 8270C. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on

data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SED-102 DUP-012915	Phenol-d6	D
	2-Fluorophenol	D
	2,4,6-Tribromophenol	D
	Nitrobenzene-d5	D
	2-Fluorobiphenyl	D
	Terphenyl-d14	D

D Diluted

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

The laboratory noted the samples associated with this SDG were diluted due to the nature of the sample matrix and based upon screening results. Surrogate recoveries are below the calibration range for the samples listed above; therefore results are qualified as estimated (J). Elevated reporting limits (RLs) are provided for all samples associated with this SDG.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SED-102/ DUP-012915	Phenol	170 U	820 U	NC

NC - Not Compliant

The compound phenol associated with sample locations SED-102 and DUP-012915 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated. The laboratory noted the sample extract for DUP-012915 was concentrated to a final volume four times higher than SED-102 due to the matrix of the sample; this resulted in a discrepancy between reporting limits.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Field blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)		X	X		
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

Validation Performed By: Jeffrey L. Davin

Signature: 

Date: February 16, 2015

Peer Review: Dennis Capria

Date: February 24, 2015

CHAIN OF CUSTODY/LABORAOTRY QUALIFIER DEFINITIONS/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica Pittsburgh
301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

064406

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hannish	Site Contact: C Bonessi	Date: 1-29-15	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: V Bortot	Carrier: FedEx	1 of 1 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below			Walk-in Client:
Fax:	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day — See below			Lab Sampling:
Project Name: Beaver Indspec				Job / SDG No.:
Site: Petrolia, PA				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Phenol (8270)			Sample Specific Notes:
SED - 101	1-29-15	1450	C	Sed	1			X			
SED - 102	1-29-15	1440	C	Sed	1			X			
SED - 103	1-29-15	1430	C	Sed	3		X	X	X		3x vol for MS/MSD
Dup - 012915	1-29-15	—	C	Sed	1			X			

180-40884 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments: Talk to Veronica about TAT - would like to get these back in a week - this is a resample due to lab error

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: 2.2	Corr'd: 2.2	Therm ID No.: 6

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
C Bonessi	Arcadis	~~1-29-15~~ CJB		TA P-77	1/30/15 1300
Relinquished by: Chris Bonessi	Company:	Date/Time: 1-30-15 1340	Received by:	Company:	Date/Time:
Relinquished by:	Company: TA P-77	Date/Time: 1/30/15 1415	Received in Laboratory by:	Company: TAP	Date/Time: 1/30/15 1415

02/13/2015

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: SED-101
Date Collected: 01/29/15 14:50
Date Received: 01/30/15 14:15

Lab Sample ID: 180-40884-1
Matrix: Sediment
Percent Solids: 79.2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		42	5.0	ug/Kg	☼	02/02/15 02:45	02/03/15 09:32	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*95*		*33 - 110*	*02/02/15 02:45*	*02/03/15 09:32*	*10*
2-Fluorophenol	*69*		*33 - 100*	*02/02/15 02:45*	*02/03/15 09:32*	*10*
Phenol-d5	*88*		*37 - 100*	*02/02/15 02:45*	*02/03/15 09:32*	*10*

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: SED-102
Date Collected: 01/29/15 14:40
Date Received: 01/30/15 14:15

Lab Sample ID: 180-40884-2
Matrix: Sediment
Percent Solids: 79.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND	J	170	20	ug/Kg	☼	02/02/15 02:45	02/04/15 06:37	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*0*	*D X*	*33 - 110*	*02/02/15 02:45*	*02/04/15 06:37*	*20*
2-Fluorophenol	*0*	*D X*	*33 - 100*	*02/02/15 02:45*	*02/04/15 06:37*	*20*
Phenol-d5	*0*	*D X*	*37 - 100*	*02/02/15 02:45*	*02/04/15 06:37*	*20*

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: SED-103
Date Collected: 01/29/15 14:30
Date Received: 01/30/15 14:15

Lab Sample ID: 180-40884-3
Matrix: Sediment
Percent Solids: 79.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**10**	**J**	42	4.9	ug/Kg	☼	02/02/15 02:45	02/04/15 07:05	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*99*		*33 - 110*	*02/02/15 02:45*	*02/04/15 07:05*	*10*
2-Fluorophenol	*80*		*33 - 100*	*02/02/15 02:45*	*02/04/15 07:05*	*10*
Phenol-d5	*82*		*37 - 100*	*02/02/15 02:45*	*02/04/15 07:05*	*10*

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-40884-1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Client Sample ID: DUP-012915
Date Collected: 01/29/15 00:00
Date Received: 01/30/15 14:15

Lab Sample ID: 180-40884-4
Matrix: Sediment
Percent Solids: 65.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND	J	820	96	ug/Kg	☼	02/02/15 02:45	02/04/15 07:33	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*0*	*D X*	*33 - 110*	*02/02/15 02:45*	*02/04/15 07:33*	*20*
2-Fluorophenol	*0*	*D X*	*33 - 100*	*02/02/15 02:45*	*02/04/15 07:33*	*20*
Phenol-d5	*0*	*D X*	*37 - 100*	*02/02/15 02:45*	*02/04/15 07:33*	*20*

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INDSPEC Petrolia

Data Review

PETROLIA, PENNSYLVANIA

Volatile and Miscellaneous analyses

SDG #: 180-36441-1 and 180-36402-1

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, PA
Burlington, VT
Tallahassee, FL

Report #: 22472R
Review Level: Tier III
Project: B0039303.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-36441-1 and 180-36402-1 for samples collected in association with the INDSPEC site in Petrolia, PA. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody.

Overall, the quality control data, as defined in the USEPA SW-846 Methods 8260B/8260C/8315A and laboratory performance criteria, were within the guidelines specified in the method with the exception of those deviations specifically mentioned in this review. The data validation resulted in a number of detect/non-detect sample results being qualified as estimated (J/UJ) respectively due to minor QC failures, or qualified as non-detect (UB) due to associated quality assurance (QA) blanks (i.e., method, trip blanks) contamination. Additionally, several non-detected sample results were qualified as rejected (R) due to major QC failures; Resorcinol and 2,3',4-Trihydroxydiphenyl associated with sediment samples SED-101, SED-102, SED-103 and DUP090414 were qualified as rejected due to matrix spike recovery deviations. Similarly, p-Phenolsulfonic acid associated with sediment samples SED-101 and DUP090414 was qualified as rejected due to matrix spike recovery deviations. With the exception of the major QC deviations listed here, all the data associated with this sampling event are usable for the intended purpose.

Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	GRO	DRO	MISC
SW-5 LANGAN	180-36441-1	Water	9/4/2014		X				X
SW-2 LANGAN	180-36441-10	Water	9/4/2014		X				X
SW-1 LANGAN	180-36441-11	Water	9/4/2014		X				X
DUP090414	180-36441-12	Sediment	9/4/2014	SED-101	X				X
SG-4	180-36441-13	Water	9/5/2014		X				X
SG-3	180-36441-14	Water	9/5/2014		X				X
SG-8	180-36441-15	Water	9/5/2014		X				X
SW-1	180-36441-16	Water	9/5/2014		X				X
SG-2	180-36441-17	Water	9/5/2014		X				X
SH-1	180-36441-18	Water	9/5/2014		X				X
SG-1	180-36441-19	Water	9/5/2014		X				X
SED-103	180-36441-2	Sediment	9/4/2014		X				X
EB090514	180-36441-20	Water	9/5/2014		X				X
DUP090514	180-36441-21	Water	9/5/2014	SG-4	X				X
TRIP BLANKS	180-36441-22	Water	9/5/2014		X				
SW-4 LANGAN	180-36441-3	Water	9/4/2014		X				X
SED-102	180-36441-4	Sediment	9/4/2014		X				X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	GRO	DRO	MISC
SW-3 LANGAN	180-36441-5	Water	9/4/2014		X				X
SED-101	180-36441-6	Sediment	9/4/2014		X				X
SG-7	180-36441-7	Water	9/4/2014		X				X
SG-5	180-36441-8	Water	9/4/2014		X				X
SG-6	180-36441-9	Water	9/4/2014		X				X

Notes:
1. Miscellaneous analyses include formaldehyde, sulfate and site specific COCs (m-Benzenedisulfonic acid, p-Phenolsulfonic acid, Benzenesulfonic acid, Resorcinol and 2,3',4-Trihydroxydiphenyl).
2. Sulfonic Acid analysis was performed by TestAmerica Burlington.
3. Formaldehyde analysis was performed by TestAmerica Tallahassee.
4. VOCs and Sulfate analyses were performed by TestAmerica Pittsburgh; the Lab IDs listed above reflect those assigned by TestAmerica Pittsburgh.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Collection Technique (grab, composite, etc.)		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 8260B, 8260C, 8315A and the LCMS/MS method for Sulfonic Acids based on TestAmerica-Burlington's SOP BR-LC-005. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SED-102	Acetone (TB)	Detected sample results <RL and <BAL	"UB" at the RL
All water samples associated with this SDG	Acetone (TB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration

RL Reporting limit
TB Trip Blank

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SG-4 TRIP BLANKS SW-3 LANGAN SG-7 SG-5 SW-2 LANGAN SW-1 LANGAN SW-1 SG-2 SH-1 SG-1 EB090514 SG-3 SG-8 DUP090514	ICV %RSD	Methylene chloride	18.0%
SG-4 TRIP BLANKS SW-3 LANGAN SG-7 SG-5 SW-2 LANGAN SW-1 LANGAN SW-1 SG-2 SH-1 SG-1 EB090514	CCV %D	Acetone	39.0%

Sample Locations	Initial/Continuing	Compound	Criteria
SED-103 SED-102 SED-101 DUP090414	CCV %D	Chloromethane	22.5%
		Bromomethane	60.9%
		Chloroethane	65.7%
		Dichlorofluoromethane	43.5%
		Trichlorofluoromethane	50.0%
		1,1,1-Trichloroethane	27.4%
		Carbon tetrachloride	28.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
SED-102	Fluorobenzene	AC
	Chlorobenzene-d5	AC
	1,4-Dichlorobenzene-d4	<LL but >25%

AC Acceptable

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SED-102	1,1,1-Trichloroethane	>UL	>UL
	1,1,2-Trichloroethane	>UL	>UL
	1,1-Dichloroethane	>UL	>UL

Sample Locations	Compound	MS Recovery	MSD Recovery
	1,1-Dichloroethene	>UL	>UL
	1,2,4-Trichlorobenzene	<LL but >10%	AC
	1,2-Dichloroethane	>UL	>UL
	2-Hexanone	>UL	>UL
	Bromomethane	>UL	>UL
	Carbon disulfide	>UL	>UL
	Carbon tetrachloride	>UL	>UL
	Chlorodibromomethane	>UL	>UL
	Chloroethane	>UL	>UL
	Chloroform	>UL	>UL
	Chloromethane	>UL	>UL
	cis-1,2-Dichloroethene	>UL	>UL
	Cyclohexane	>UL	AC
	Dichlorobromomethane	>UL	>UL
	Dichlorodifluoromethane	>UL	>UL
	Methyl tert-butyl ether	>UL	AC
	Toluene	>UL	>UL
	trans-1,2-Dichloroethene	>UL	>UL
	trans-1,3-Dichloropropene	>UL	>UL
	Trichlorofluoromethane	>UL	>UL
	Vinyl chloride	>UL	>UL

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Sample locations associated with MS/MSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SED-102	1,2,4-Trichlorobenzene
	1,2-Dibromo-3-Chloropropane
	1,2-Dichlorobenzene
	1,3-Dichlorobenzene
	1,4-Dichlorobenzene

The criteria used to evaluate the RPD between the MS/MSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Laboratory Control Sample (LCS) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SED-103	Bromomethane	>UL
	Carbon tetrachloride	>UL
	Chloroethane	>UL

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SED-101/ DUP090414	Ethyl ether	0.66 J	5.7 U	AC
SG-4/ DUP090514	1,2-Dichlorobenzene	1.6	1.8	AC
	1,4-Dichlorobenzene	0.36 J	0.38 J	AC
	Benzene	0.12 J	0.15 J	AC
	Chlorobenzene	0.88 J	1.1	AC
	Ethyl ether	1.5	0.90 J	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
C. Trip blanks		X	X		
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X	X		
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SITE SPECIFIC COCs (m-Benzenedisulfonic acid, p-Phenolsulfonic acid, Benzenesulfonic acid, Resorcinol and 2,3',4-Trihydroxydiphenyl)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
LCMS/MS method for Site-Specific COCs based on TestAmerica-Burlington's SOP BR-LC-005	Water	7 days from collection to analysis	Cool to <6 °C.
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SW-5 LANGAN	Resorcinol	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SW-4 LANGAN	2,3',4-Trihydroxydiphenyl	>UL	NA
	m-Benzenedisulfonic acid	>UL	NA
SW-3 LANGAN	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-2	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SH-1	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-1	2,3',4-Trihydroxydiphenyl	>UL	NA
DUP090514	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-4	2,3',4-Trihydroxydiphenyl	>UL	>UL
SW-5	Resorcinol	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SW-4	2,3',4-Trihydroxydiphenyl	>UL	NA
	m-Benzenedisulfonic acid	>UL	NA
SW-3	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-7	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-5	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-6	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SW-2 LANGAN	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA

Sample Locations	Compound	MS Recovery	MSD Recovery
SW-1 LANGAN	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SW-1	Benzenesulfonic acid	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-3	2,3',4-Trihydroxydiphenyl	>UL	NA
SG-8	2,3',4-Trihydroxydiphenyl	>UL	NA
SED-102	p-Phenolsulfonic acid	<LL but >10%	<LL but >10%
	Benzenesulfonic acid	<10%	<10%
	Resorcinol	<10%	<10%
	2,3',4-Trihydroxydiphenyl	<10%	<10%
SED-103	m-Benzenedisulfonic acid	<LL but >10%	NA
	Benzenesulfonic acid	<LL but >10%	NA
	Resorcinol	<10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA
SED-101	m-Benzenedisulfonic acid	<10%	NA
	p-Phenolsulfonic acid	<10%	NA
	Benzenesulfonic acid	<LL but >10%	NA
	Resorcinol	<10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA
DUP090414	m-Benzenedisulfonic acid	<10%	NA
	p-Phenolsulfonic acid	<10%	NA
	Benzenesulfonic acid	<LL but >10%	NA
	Resorcinol	<10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA

AC Acceptable
NA Not Analyzed

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Please note the laboratory analyzed a matrix spike (MS) on every sample associated with this SDG. This additional measure of quality control was adopted by the laboratory as there is no surrogate standard or internal standard used for this analysis. The MS is being used as a measure of accuracy for the analysis. The sediment sample matrix spikes generally exhibited recoveries below ten percent for the following compounds: Resorcinol, 2,3',4-Trihydroxydiphenyl and p-Phenolsulfonic acid. The low matrix spike

recovery demonstrates a loss of these compounds due to sample matrix interference. The Lab Control Samples (LCS) associated with these samples generally exhibited acceptable recoveries. Compounds exhibiting recovery less than ten percent in the matrix spike that were non-detect in the associated parent sample were qualified as rejected (R).

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SED-101/ DUP090414	m-Benzenedisulfonic acid	140	160	13.3%
	p-Phenolsulfonic acid	20 U	19 U	AC
	Benzenesulfonic acid	20 U	19 U	AC
	Resorcinol	20 U	19 U	AC
	2,3',4-Trihydroxydiphenyl	59 U	58 U	AC
SG-4/ DUP090514	m-Benzenedisulfonic acid	3700	3200	14.5%
	p-Phenolsulfonic acid	150	240	AC
	Benzenesulfonic acid	54	51	AC
	Resorcinol	50 U	50 U	AC
	2,3',4-Trihydroxydiphenyl	50 U	50 U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Low Laboratory Control Sample (LCS/LLCS) Analysis

The LCS/LLCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LLCS analysis must exhibit a percent recovery between the control limits of 60% and 140%.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

The laboratory analyzed a Low Laboratory Control Sample (LLCS) that was spiked at a concentration at or below the reporting limit. Since the results below the reporting limit are not reported for this method, the LLCS recoveries were not evaluated as a measure of accuracy.

7. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SW-5 LANGAN	m-Benzenedisulfonic acid	--	1300 D	1300 D
SW-4 LANGAN	m-Benzenedisulfonic acid	--	1300 D	1300 D
SED-102	m-Benzenedisulfonic acid	--	5000 D	5000 D
SW-3 LANGAN	m-Benzenedisulfonic acid	--	1700 D	1700 D
SG-7	m-Benzenedisulfonic acid	--	1900 D	1900 D
SG-5	m-Benzenedisulfonic acid	--	2400 D	2400 D
SG-4	m-Benzenedisulfonic acid	--	3700 D	3700 D
SG-3	m-Benzenedisulfonic acid	--	3100 D	3100 D
SG-8	m-Benzenedisulfonic acid	--	1000 D	1000 D
DUP090514	m-Benzenedisulfonic acid	--	3200 D	3200 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SULFONIC ACID

Site Specific COCs: LCMS/MS method based on TestAmerica-Burlington's SOP BR-LC-005	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Low Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

FORMALDEHYDE ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Formaldehyde by SW846 8315A	Water	3 days from collection to derivatization and 3 days from derivatization to analysis	Cool to <6 °C
	Soil	14 Days to extraction and 40 days from extraction to analysis	Cool to <6 °C

The analyses that exceeded the holding are presented in the following table.

Sample Locations	Holding Time	Criteria
SG-5 SG-6 SW-2 LANGAN SW-1 LANGAN	Analysis Completed in 4 days	3 Days

Sample results associated with sample locations analyzed by analytical method SW-846 8315A were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

The MS/MSD analysis exhibited recoveries and RPD within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SED-101/ DUP090414	Formaldehyde	390	690	AC
SG-4/ DUP090514	Formaldehyde	50 U	9.7 J	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR FORMALDEHYDE

Formaldehyde: SW846 8315A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 300.0. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

    U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

    B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

    E The reported value is estimated due to the presence of interference.

    N Spiked sample recovery is not within control limits.

    * Duplicate analysis is not within control limits.

- Validation Qualifiers

    J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

    UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

    J+ The result is an estimated quantity, but the result may be biased high.

    J- The result is an estimated quantity, but the result may be biased low.

    UB Analyte considered non-detect at the listed value due to associated blank contamination.

    R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict

QC serves to increase confidence in data but any value potentially contains error.

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to <6 °C.
	Soil	28 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The

MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries and RPD within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SED-101/ DUP090414	Sulfate	59	120	68.2%
SG-4/ DUP090514	Sulfate	92	93	1.1%

AC Acceptable
U Not detected

Sulfate results associated with sample locations SED-101 and DUP090414 exhibited a field duplicate RPD greater than the control limit. The associated sample results for the listed sample locations were qualified as estimated.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 300.0	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
C. Instrument blanks		X		X	
D. Method blanks		X		X	
E. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

Validation Performed By: Jeffrey L. Davin

Signature: 

Date: October 20, 2014

Peer Review: Dennis Capria

Date: October 23, 2014

CHAIN OF CUSTODY/LABORAOTRY QUALIFIER DEFINITIONS/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-103**

Lab Sample ID: 180-36441-2
Client Matrix: Solid
% Moisture: 23.4
Date Sampled: 09/04/2014 1220
Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090806.D
Dilution:	1.0			Initial Weight/Volume:	5.0003 g
Analysis Date:	09/08/2014 0708			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.63	6.5
1,1,2,2-Tetrachloroethane		ND		0.94	6.5
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.4	6.5
1,1,2-Trichloroethane		ND		1.1	6.5
1,1-Dichloroethane		ND		0.75	6.5
1,1-Dichloroethene		ND		1.1	6.5
1,2,4-Trichlorobenzene		ND		1.2	6.5
1,2-Dibromo-3-Chloropropane		ND		0.98	6.5
1,2-Dichlorobenzene		ND		1.0	6.5
1,2-Dichloroethane		ND		0.80	6.5
1,2-Dichloropropane		ND		0.71	6.5
1,3-Dichlorobenzene		ND		0.86	6.5
1,4-Dichlorobenzene		ND		0.83	6.5
2-Butanone (MEK)		ND		1.2	6.5
2-Hexanone		ND		0.90	6.5
4-Methyl-2-pentanone (MIBK)		ND		0.85	6.5
Acetone		ND		6.5	26
Benzene		ND		0.88	6.5
Bromoform		ND		0.58	6.5
Bromomethane		ND	*	0.96	6.5
Carbon disulfide		ND		0.67	6.5
Carbon tetrachloride		ND	*	0.58	6.5
Chlorobenzene		ND		0.99	6.5
Chlorodibromomethane		ND		0.93	6.5
Chloroethane		ND	*	2.0	6.5
Chloroform		ND		0.76	6.5
Chloromethane		ND		1.1	6.5
cis-1,2-Dichloroethene		ND		0.92	6.5
cis-1,3-Dichloropropene		ND		0.88	6.5
Cyclohexane		ND		0.48	6.5
Dichlorobromomethane		ND		0.73	6.5
Dichlorodifluoromethane		ND		0.87	6.5
Ethyl ether		40		0.76	6.5
Ethylbenzene		ND		0.84	6.5
1,2-Dibromoethane		ND		1.1	6.5
Isopropylbenzene		ND		0.89	6.5
Methyl acetate		ND		1.2	6.5
Methyl tert-butyl ether		ND		0.98	6.5
Methylcyclohexane		ND		0.95	6.5
Methylene Chloride		ND		0.88	6.5
Styrene		ND		0.92	6.5
Tetrachloroethene		ND		0.89	6.5
Toluene		ND		0.95	6.5
trans-1,2-Dichloroethene		ND		0.78	6.5
trans-1,3-Dichloropropene		ND		0.78	6.5
Trichloroethene		ND		0.86	6.5

Client: ARCADIS U.S. Inc | Job Number: 180-36441-1

Client Sample ID: **SED-103**

Lab Sample ID: 180-36441-2 | Date Sampled: 09/04/2014 1220
Client Matrix: Solid | % Moisture: 23.4 | Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090806.D
Dilution:	1.0			Initial Weight/Volume:	5.0003 g
Analysis Date:	09/08/2014 0708			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Trichlorofluoromethane		ND		1.2	6.5
Vinyl chloride		ND		0.61	6.5

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116		52 - 124
4-Bromofluorobenzene (Surr)	86		63 - 120
Dibromofluoromethane (Surr)	109		68 - 121
Toluene-d8 (Surr)	111		72 - 127

Client: ARCADIS U.S. Inc | Job Number: 180-36441-1

Client Sample ID: **SED-102**

Lab Sample ID: 180-36441-4 | Date Sampled: 09/04/2014 1310
Client Matrix: Solid | % Moisture: 32.0 | Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090807.D
Dilution:	1.0			Initial Weight/Volume:	5.0002 g
Analysis Date:	09/08/2014 0730			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.72	7.4
1,1,2,2-Tetrachloroethane		ND		1.1	7.4
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.6	7.4
1,1,2-Trichloroethane		ND		1.2	7.4
1,1-Dichloroethane		ND		0.85	7.4
1,1-Dichloroethene		ND		1.2	7.4
1,2,4-Trichlorobenzene		ND	UJ	1.3	7.4
1,2-Dibromo-3-Chloropropane		ND	UJ	1.1	7.4
1,2-Dichlorobenzene		ND	UJ	1.2	7.4
1,2-Dichloroethane		ND		0.90	7.4
1,2-Dichloropropane		ND		0.80	7.4
1,3-Dichlorobenzene		ND	UJ	0.97	7.4
1,4-Dichlorobenzene		ND	UJ	0.94	7.4
2-Butanone (MEK)		ND		1.3	7.4
2-Hexanone		ND		1.0	7.4
4-Methyl-2-pentanone (MIBK)		ND		0.96	7.4
Acetone	29	~~19~~	UB	7.4	29
Benzene		ND		0.99	7.4
Bromoform		ND		0.65	7.4
Bromomethane		ND		1.1	7.4
Carbon disulfide		ND		0.75	7.4
Carbon tetrachloride		ND		0.66	7.4
Chlorobenzene		ND		1.1	7.4
Chlorodibromomethane		ND		1.0	7.4
Chloroethane		ND		2.3	7.4
Chloroform		ND		0.86	7.4
Chloromethane		ND		1.3	7.4
cis-1,2-Dichloroethene		ND		1.0	7.4
cis-1,3-Dichloropropene		ND		1.0	7.4
Cyclohexane		37	J	0.55	7.4
Dichlorobromomethane		ND		0.83	7.4
Dichlorodifluoromethane		ND		0.98	7.4
Ethyl ether		1.6	J	0.86	7.4
Ethylbenzene		2.2	J	0.95	7.4
1,2-Dibromoethane		ND		1.3	7.4
Isopropylbenzene		2.8	J	1.0	7.4
Methyl acetate		ND		1.3	7.4
Methyl tert-butyl ether		ND		1.1	7.4
Methylcyclohexane		100		1.1	7.4
Methylene Chloride		ND		0.99	7.4
Styrene		ND		1.0	7.4
Tetrachloroethene		ND		1.0	7.4
Toluene		ND		1.1	7.4
trans-1,2-Dichloroethene		ND		0.88	7.4
trans-1,3-Dichloropropene		ND		0.88	7.4
Trichloroethene		ND		0.97	7.4

Client: ARCADIS U.S. Inc | Job Number: 180-36441-1

Client Sample ID: **SED-102**

Lab Sample ID: 180-36441-4 | Date Sampled: 09/04/2014 1310
Client Matrix: Solid | % Moisture: 32.0 | Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090807.D
Dilution:	1.0			Initial Weight/Volume:	5.0002 g
Analysis Date:	09/08/2014 0730			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Trichlorofluoromethane		ND		1.4	7.4
Vinyl chloride		ND		0.69	7.4

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		52 - 124
4-Bromofluorobenzene (Surr)	85		63 - 120
Dibromofluoromethane (Surr)	110		68 - 121
Toluene-d8 (Surr)	116		72 - 127

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-101**

Lab Sample ID: 180-36441-6
Client Matrix: Solid
% Moisture: 8.8
Date Sampled: 09/04/2014 1400
Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090813.D
Dilution:	1.0			Initial Weight/Volume:	5.0008 g
Analysis Date:	09/08/2014 0945			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.53	5.5
1,1,2,2-Tetrachloroethane		ND		0.79	5.5
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.5
1,1,2-Trichloroethane		ND		0.91	5.5
1,1-Dichloroethane		ND		0.63	5.5
1,1-Dichloroethene		ND		0.93	5.5
1,2,4-Trichlorobenzene		ND		0.97	5.5
1,2-Dibromo-3-Chloropropane		ND		0.82	5.5
1,2-Dichlorobenzene		ND		0.87	5.5
1,2-Dichloroethane		ND		0.67	5.5
1,2-Dichloropropane		ND		0.60	5.5
1,3-Dichlorobenzene		ND		0.72	5.5
1,4-Dichlorobenzene		ND		0.70	5.5
2-Butanone (MEK)		ND		0.97	5.5
2-Hexanone		ND		0.76	5.5
4-Methyl-2-pentanone (MIBK)		ND		0.72	5.5
Acetone		ND		5.5	22
Benzene		ND		0.74	5.5
Bromoform		ND		0.49	5.5
Bromomethane		ND	*	0.81	5.5
Carbon disulfide		ND		0.56	5.5
Carbon tetrachloride		ND	*	0.49	5.5
Chlorobenzene		ND		0.83	5.5
Chlorodibromomethane		ND		0.78	5.5
Chloroethane		ND	*	1.7	5.5
Chloroform		ND		0.64	5.5
Chloromethane		ND		0.93	5.5
cis-1,2-Dichloroethene		ND		0.77	5.5
cis-1,3-Dichloropropene		ND		0.74	5.5
Cyclohexane		ND		0.41	5.5
Dichlorobromomethane		ND		0.62	5.5
Dichlorodifluoromethane		ND		0.73	5.5
Ethyl ether		0.66	J	0.64	5.5
Ethylbenzene		ND		0.70	5.5
1,2-Dibromoethane		ND		0.95	5.5
Isopropylbenzene		ND		0.74	5.5
Methyl acetate		ND		0.99	5.5
Methyl tert-butyl ether		ND		0.82	5.5
Methylcyclohexane		ND		0.80	5.5
Methylene Chloride		ND		0.74	5.5
Styrene		ND		0.77	5.5
Tetrachloroethene		ND		0.75	5.5
Toluene		ND		0.80	5.5
trans-1,2-Dichloroethene		ND		0.65	5.5
trans-1,3-Dichloropropene		ND		0.66	5.5
Trichloroethene		ND		0.72	5.5

Client: ARCADIS U.S. Inc | Job Number: 180-36441-1

Client Sample ID: **SED-101**

Lab Sample ID: 180-36441-6 | Date Sampled: 09/04/2014 1400
Client Matrix: Solid | % Moisture: 8.8 | Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090813.D
Dilution:	1.0			Initial Weight/Volume:	5.0008 g
Analysis Date:	09/08/2014 0945			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Trichlorofluoromethane		ND		1.0	5.5
Vinyl chloride		ND		0.51	5.5

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		52 - 124
4-Bromofluorobenzene (Surr)	92		63 - 120
Dibromofluoromethane (Surr)	100		68 - 121
Toluene-d8 (Surr)	99		72 - 127

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090414**

Lab Sample ID: 180-36441-12
Client Matrix: Solid
% Moisture: 11.7
Date Sampled: 09/04/2014 0000
Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090812.D
Dilution:	1.0			Initial Weight/Volume:	5.0006 g
Analysis Date:	09/08/2014 0923			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
1,1,1-Trichloroethane		ND		0.55	5.7
1,1,2,2-Tetrachloroethane		ND		0.81	5.7
1,1,2-Trichloro-1,2,2-trifluoroethane		ND		1.2	5.7
1,1,2-Trichloroethane		ND		0.94	5.7
1,1-Dichloroethane		ND		0.65	5.7
1,1-Dichloroethene		ND		0.96	5.7
1,2,4-Trichlorobenzene		ND		1.0	5.7
1,2-Dibromo-3-Chloropropane		ND		0.85	5.7
1,2-Dichlorobenzene		ND		0.90	5.7
1,2-Dichloroethane		ND		0.69	5.7
1,2-Dichloropropane		ND		0.62	5.7
1,3-Dichlorobenzene		ND		0.74	5.7
1,4-Dichlorobenzene		ND		0.72	5.7
2-Butanone (MEK)		ND		1.0	5.7
2-Hexanone		ND		0.78	5.7
4-Methyl-2-pentanone (MIBK)		ND		0.74	5.7
Acetone		ND		5.7	23
Benzene		ND		0.76	5.7
Bromoform		ND		0.50	5.7
Bromomethane		ND	*	0.84	5.7
Carbon disulfide		ND		0.58	5.7
Carbon tetrachloride		ND	*	0.51	5.7
Chlorobenzene		ND		0.86	5.7
Chlorodibromomethane		ND		0.80	5.7
Chloroethane		ND	*	1.8	5.7
Chloroform		ND		0.66	5.7
Chloromethane		ND		0.96	5.7
cis-1,2-Dichloroethene		ND		0.80	5.7
cis-1,3-Dichloropropene		ND		0.77	5.7
Cyclohexane		ND		0.42	5.7
Dichlorobromomethane		ND		0.64	5.7
Dichlorodifluoromethane		ND		0.75	5.7
Ethyl ether		ND		0.66	5.7
Ethylbenzene		ND		0.73	5.7
1,2-Dibromoethane		ND		0.98	5.7
Isopropylbenzene		ND		0.77	5.7
Methyl acetate		ND		1.0	5.7
Methyl tert-butyl ether		ND		0.85	5.7
Methylcyclohexane		ND		0.82	5.7
Methylene Chloride		ND		0.76	5.7
Styrene		ND		0.80	5.7
Tetrachloroethene		ND		0.77	5.7
Toluene		ND		0.83	5.7
trans-1,2-Dichloroethene		ND		0.67	5.7
trans-1,3-Dichloropropene		ND		0.68	5.7
Trichloroethene		ND		0.75	5.7

Client: ARCADIS U.S. Inc Job Number: 180-36441-1

Client Sample ID: **DUP090414**

Lab Sample ID: 180-36441-12 Date Sampled: 09/04/2014 0000
Client Matrix: Solid % Moisture: 11.7 Date Received: 09/06/2014 0915

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	180-117276	Instrument ID:	CHHP3
Prep Method:	5030B	Prep Batch:	180-117277	Lab File ID:	3090812.D
Dilution:	1.0			Initial Weight/Volume:	5.0006 g
Analysis Date:	09/08/2014 0923			Final Weight/Volume:	5 mL
Prep Date:	09/08/2014 0418				

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Trichlorofluoromethane		ND		1.0	5.7
Vinyl chloride		ND		0.53	5.7

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	107		52 - 124
4-Bromofluorobenzene (Surr)	93		63 - 120
Dibromofluoromethane (Surr)	105		68 - 121
Toluene-d8 (Surr)	102		72 - 127

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-5 LANGAN**

Lab Sample ID: 180-36441-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 1745			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 1745				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	0.91	J	0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	12	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.32	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	7.9		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND		0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-5 LANGAN**

Lab Sample ID: 180-36441-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 1745			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 1745				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	122		64 - 135
4-Bromofluorobenzene (Surr)	97		70 - 118
Dibromofluoromethane (Surr)	126		70 - 128
Toluene-d8 (Surr)	108		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-4 LANGAN**

Lab Sample ID: 180-36441-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914016.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 1809			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 1809				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	0.89	J	0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	16	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.32	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	6.6		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND		0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-4 LANGAN**

Lab Sample ID: 180-36441-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914016.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 1809			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 1809				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	121		64 - 135
4-Bromofluorobenzene (Surr)	98		70 - 118
Dibromofluoromethane (Surr)	128		70 - 128
Toluene-d8 (Surr)	112		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-3 LANGAN**

Lab Sample ID: 180-36441-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915013.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1604			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1604				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	0.94	J	0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.22	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	14	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.35	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	5.5		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-3 LANGAN**

Lab Sample ID: 180-36441-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915013.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1604			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1604				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 135
4-Bromofluorobenzene (Surr)	102		70 - 118
Dibromofluoromethane (Surr)	101		70 - 128
Toluene-d8 (Surr)	106		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36441-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915014.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1628			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1628				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.1		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.23	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	6.3	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.43	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	6.1		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36441-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915014.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1628			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1628				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	99		64 - 135
4-Bromofluorobenzene (Surr)	106		70 - 118
Dibromofluoromethane (Surr)	100		70 - 128
Toluene-d8 (Surr)	109		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36441-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1652			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1652				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.4		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.32	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	8.3	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.66	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	2.4		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36441-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1652			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1652				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	101		64 - 135
4-Bromofluorobenzene (Surr)	106		70 - 118
Dibromofluoromethane (Surr)	102		70 - 128
Toluene-d8 (Surr)	109		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-6**

Lab Sample ID: 180-36441-9
Client Matrix: Water

Date Sampled: 09/04/2014 1600
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914021.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 2010			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 2010				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	0.84	J	0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	12 UB		2.5	5.0
Benzene	0.28	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	0.11	J	0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND		0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-6**

Lab Sample ID: 180-36441-9
Client Matrix: Water

Date Sampled: 09/04/2014 1600
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-117991	Instrument ID:	CHHP5
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	50914021.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/14/2014 2010			Final Weight/Volume:	5 mL
Prep Date:	09/14/2014 2010				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	124		64 - 135
4-Bromofluorobenzene (Surr)	91		70 - 118
Dibromofluoromethane (Surr)	128		70 - 128
Toluene-d8 (Surr)	104		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-2 LANGAN**

Lab Sample ID: 180-36441-10
Client Matrix: Water

Date Sampled: 09/04/2014 1615
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915016.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1715			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1715				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	9.7	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	ND		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc Job Number: 180-36441-1

Client Sample ID: **SW-2 LANGAN**

Lab Sample ID: 180-36441-10 Date Sampled: 09/04/2014 1615
Client Matrix: Water Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915016.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1715			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1715				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 135
4-Bromofluorobenzene (Surr)	105		70 - 118
Dibromofluoromethane (Surr)	102		70 - 128
Toluene-d8 (Surr)	107		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1 LANGAN**

Lab Sample ID: 180-36441-11
Client Matrix: Water

Date Sampled: 09/04/2014 1630
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915017.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1740			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1740				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.9	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	ND		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1 LANGAN**

Lab Sample ID: 180-36441-11
Client Matrix: Water

Date Sampled: 09/04/2014 1630
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915017.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1740			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1740				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 135
4-Bromofluorobenzene (Surr)	105		70 - 118
Dibromofluoromethane (Surr)	101		70 - 128
Toluene-d8 (Surr)	108		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915006.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1314			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1314				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.6		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.36	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.4	UB	2.5	5.0
Benzene	0.12	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.88	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	1.5		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915006.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1314			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1314				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	97		64 - 135
4-Bromofluorobenzene (Surr)	102		70 - 118
Dibromofluoromethane (Surr)	102		70 - 128
Toluene-d8 (Surr)	106		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915007.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1607			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1607				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.9		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.36	J	0.21	1.0
2-Butanone (MEK)	0.69	J	0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	7.2	UB	2.5	5.0
Benzene	0.17	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	1.1		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	1.0		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915007.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1607			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1607				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		64 - 135
4-Bromofluorobenzene (Surr)	103		70 - 118
Dibromofluoromethane (Surr)	105		70 - 128
Toluene-d8 (Surr)	106		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915014.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1859			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1859				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	2.6		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.64	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	19	UB	2.5	5.0
Benzene	0.15	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	2.1		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	1.1		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915014.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1859			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1859				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		64 - 135
4-Bromofluorobenzene (Surr)	105		70 - 118
Dibromofluoromethane (Surr)	103		70 - 128
Toluene-d8 (Surr)	107		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1**

Lab Sample ID: 180-36441-16
Client Matrix: Water

Date Sampled: 09/05/2014 1105
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915019.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1828			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1828				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.7		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.30	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	8.8	UB	2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.70	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	0.54	J	0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1**

Lab Sample ID: 180-36441-16
Client Matrix: Water

Date Sampled: 09/05/2014 1105
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915019.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1828			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1828				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	98		64 - 135
4-Bromofluorobenzene (Surr)	103		70 - 118
Dibromofluoromethane (Surr)	101		70 - 128
Toluene-d8 (Surr)	106		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-2**

Lab Sample ID: 180-36441-17
Client Matrix: Water

Date Sampled: 09/05/2014 1145
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915020.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1852			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1852				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.2		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	6.3	UB	2.5	5.0
Benzene	0.11	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	0.34	J	0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	0.31	J	0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc Job Number: 180-36441-1

Client Sample ID: **SG-2**

Lab Sample ID: 180-36441-17 Date Sampled: 09/05/2014 1145
Client Matrix: Water Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915020.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1852			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1852				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102		64 - 135
4-Bromofluorobenzene (Surr)	108		70 - 118
Dibromofluoromethane (Surr)	100		70 - 128
Toluene-d8 (Surr)	110		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SH-1**

Lab Sample ID: 180-36441-18
Client Matrix: Water

Date Sampled: 09/05/2014 1215
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915021.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1916			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1916				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.7	UB	2.5	5.0
Benzene	0.11	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	0.20	J	0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SH-1**

Lab Sample ID: 180-36441-18
Client Matrix: Water

Date Sampled: 09/05/2014 1215
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915021.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1916			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1916				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104		64 - 135
4-Bromofluorobenzene (Surr)	109		70 - 118
Dibromofluoromethane (Surr)	98		70 - 128
Toluene-d8 (Surr)	109		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-1**

Lab Sample ID: 180-36441-19
Client Matrix: Water

Date Sampled: 09/05/2014 1225
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915023.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 2003			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 2003				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.9	UB	2.5	5.0
Benzene	0.13	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	ND		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-1**

Lab Sample ID: 180-36441-19
Client Matrix: Water

Date Sampled: 09/05/2014 1225
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915023.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 2003			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 2003				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		64 - 135
4-Bromofluorobenzene (Surr)	102		70 - 118
Dibromofluoromethane (Surr)	105		70 - 128
Toluene-d8 (Surr)	106		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **EB090514**

Lab Sample ID: 180-36441-20
Client Matrix: Water

Date Sampled: 09/05/2014 1230
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915024.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 2027			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 2027				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.3		2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	ND		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **EB090514**

Lab Sample ID: 180-36441-20
Client Matrix: Water

Date Sampled: 09/05/2014 1230
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915024.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 2027			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 2027				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 135
4-Bromofluorobenzene (Surr)	108		70 - 118
Dibromofluoromethane (Surr)	101		70 - 128
Toluene-d8 (Surr)	111		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1923			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1923				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	1.8		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	0.38	J	0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	5.5	UB	2.5	5.0
Benzene	0.15	J	0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	1.1		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	0.90	J	0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	ND	UJ	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118218	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915015.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/16/2014 1923			Final Weight/Volume:	5 mL
Prep Date:	09/16/2014 1923				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		64 - 135
4-Bromofluorobenzene (Surr)	108		70 - 118
Dibromofluoromethane (Surr)	102		70 - 128
Toluene-d8 (Surr)	108		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **TRIP BLANKS**

Lab Sample ID: 180-36441-22
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915007.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1337			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1337				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	ND		0.29	1.0
1,1,2,2-Tetrachloroethane	ND		0.20	1.0
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.32	1.0
1,1,2-Trichloroethane	ND		0.20	1.0
1,1-Dichloroethane	ND		0.12	1.0
1,1-Dichloroethene	ND		0.30	1.0
1,2,4-Trichlorobenzene	ND		0.27	1.0
1,2-Dibromo-3-Chloropropane	ND		0.14	1.0
1,2-Dichlorobenzene	ND		0.15	1.0
1,2-Dichloroethane	ND		0.21	1.0
1,2-Dichloropropane	ND		0.095	1.0
1,3-Dichlorobenzene	ND		0.11	1.0
1,4-Dichlorobenzene	ND		0.21	1.0
2-Butanone (MEK)	ND		0.55	5.0
2-Hexanone	ND		0.16	5.0
4-Methyl-2-pentanone (MIBK)	ND		0.53	5.0
Acetone	12		2.5	5.0
Benzene	ND		0.11	1.0
Bromoform	ND		0.19	1.0
Bromomethane	ND		0.31	1.0
Carbon disulfide	ND		0.21	1.0
Carbon tetrachloride	ND		0.14	1.0
Chlorobenzene	ND		0.14	1.0
Chlorodibromomethane	ND		0.14	1.0
Chloroethane	ND		0.21	1.0
Chloroform	ND		0.17	1.0
Chloromethane	ND		0.28	1.0
cis-1,2-Dichloroethene	ND		0.24	1.0
cis-1,3-Dichloropropene	ND		0.19	1.0
Cyclohexane	ND		0.25	1.0
Dichlorobromomethane	ND		0.13	1.0
Dichlorodifluoromethane	ND		0.19	1.0
Ethyl ether	ND		0.082	1.0
Ethylbenzene	ND		0.23	1.0
1,2-Dibromoethane	ND		0.18	1.0
Isopropylbenzene	ND		0.16	1.0
Methyl acetate	ND		0.14	1.0
Methyl tert-butyl ether	ND		0.18	1.0
Methylcyclohexane	ND		0.26	1.0
Methylene Chloride	0.68	J	0.13	1.0
Styrene	ND		0.097	1.0
Tetrachloroethene	ND		0.15	1.0
Toluene	ND		0.15	1.0
trans-1,2-Dichloroethene	ND		0.17	1.0
trans-1,3-Dichloropropene	ND		0.15	1.0
Trichloroethene	ND		0.14	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **TRIP BLANKS**

Lab Sample ID: 180-36441-22
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	180-118072	Instrument ID:	CHHP6
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	60915007.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	09/15/2014 1337			Final Weight/Volume:	5 mL
Prep Date:	09/15/2014 1337				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Trichlorofluoromethane	ND		0.20	1.0
Vinyl chloride	ND		0.23	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100		64 - 135
4-Bromofluorobenzene (Surr)	100		70 - 118
Dibromofluoromethane (Surr)	103		70 - 128
Toluene-d8 (Surr)	104		71 - 118

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-5 LANGAN**

Lab Sample ID: 180-36441-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201420.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1726			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	94		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-103**

Lab Sample ID: 180-36441-2
Client Matrix: Solid

% Moisture: 23.4

Date Sampled: 09/04/2014 1220
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography-Soluble

Analysis Method:	300.0	Analysis Batch:	180-117995	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-14-201419.0000.d
Dilution:	1.0	Leach Batch:	180-118001	Initial Weight/Volume:	1 mL
Analysis Date:	09/14/2014 1647			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL
Leach Date:	09/14/2014 1211				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Sulfate		68		2.8	13

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-4 LANGAN**

Lab Sample ID: 180-36441-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201421.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1741			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	99		1.1	5.0

Client: ARCADIS U.S. Inc | Job Number: 180-36441-1

Client Sample ID: **SED-102**

Lab Sample ID: 180-36441-4 | Date Sampled: 09/04/2014 1310
Client Matrix: Solid | % Moisture: 32.0 | Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography-Soluble

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201412.0000.d
Dilution:	5.0	Leach Batch:	180-118001	Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1521			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL
Leach Date:	09/14/2014 1211				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Sulfate		2500		16	74

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-3 LANGAN**

Lab Sample ID: 180-36441-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201422.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1757			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	100		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-101**

Lab Sample ID: 180-36441-6
Client Matrix: Solid
% Moisture: 8.8

Date Sampled: 09/04/2014 1400
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography-Soluble

Analysis Method:	300.0	Analysis Batch:	180-117995	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-14-201423.0000.d
Dilution:	1.0	Leach Batch:	180-118001	Initial Weight/Volume:	1 mL
Analysis Date:	09/14/2014 1749			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL
Leach Date:	09/14/2014 1211				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Sulfate		59	J	2.3	11

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36441-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201423.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1812			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	99		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36441-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201426.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1859			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	98		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-6**

Lab Sample ID: 180-36441-9
Client Matrix: Water

Date Sampled: 09/04/2014 1600
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201429.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 1946			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	89		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-2 LANGAN**

Lab Sample ID: 180-36441-10
Client Matrix: Water

Date Sampled: 09/04/2014 1615
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201430.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2001			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	93		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1 LANGAN**

Lab Sample ID: 180-36441-11
Client Matrix: Water

Date Sampled: 09/04/2014 1630
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201431.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2017			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	89		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090414**

Lab Sample ID: 180-36441-12
Client Matrix: Solid
% Moisture: 11.7
Date Sampled: 09/04/2014 0000
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography-Soluble

Analysis Method:	300.0	Analysis Batch:	180-117995	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-14-201424.0000.d
Dilution:	1.0	Leach Batch:	180-118001	Initial Weight/Volume:	1 mL
Analysis Date:	09/14/2014 1805			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL
Leach Date:	09/14/2014 1211				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Sulfate		120	J	2.4	11

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201432.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2032			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	92		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201435.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2119			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	95		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201436.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2135			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	98		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1**

Lab Sample ID: 180-36441-16
Client Matrix: Water

Date Sampled: 09/05/2014 1105
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201437.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2150			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	92		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-2**

Lab Sample ID: 180-36441-17
Client Matrix: Water

Date Sampled: 09/05/2014 1145
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201438.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2206			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	95		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SH-1**

Lab Sample ID: 180-36441-18
Client Matrix: Water

Date Sampled: 09/05/2014 1215
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201441.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2252			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	90		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-1**

Lab Sample ID: 180-36441-19
Client Matrix: Water

Date Sampled: 09/05/2014 1225
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201442.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2308			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	93		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **EB090514**

Lab Sample ID: 180-36441-20
Client Matrix: Water

Date Sampled: 09/05/2014 1230
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201443.0000.d
Dilution:	1.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2324			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	ND		0.21	1.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	180-118382	Instrument ID:	CHIC25
	N/A	Prep Batch:	N/A	Lab File ID:	09-17-201444.0000.d
Dilution:	5.0			Initial Weight/Volume:	1 mL
Analysis Date:	09/17/2014 2339			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	25 uL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	93		1.1	5.0

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J19.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1355			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	9.7	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J22.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1431			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J23.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1442			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	8.1	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1**

Lab Sample ID: 180-36441-16
Client Matrix: Water

Date Sampled: 09/05/2014 1105
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J24.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1454			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	14	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-2**

Lab Sample ID: 180-36441-17
Client Matrix: Water

Date Sampled: 09/05/2014 1145
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J25.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1506			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	7.8	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SH-1**

Lab Sample ID: 180-36441-18
Client Matrix: Water

Date Sampled: 09/05/2014 1215
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J26.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1518			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	15	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-1**

Lab Sample ID: 180-36441-19
Client Matrix: Water

Date Sampled: 09/05/2014 1225
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J27.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1530			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	9.0	J	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **EB090514**

Lab Sample ID: 180-36441-20
Client Matrix: Water

Date Sampled: 09/05/2014 1230
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J29.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1553			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111453	Lab File ID:	1I09J30.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1605			Final Weight/Volume:	4.0 mL
Prep Date:	09/07/2014 1210			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-5 LANGAN**

Lab Sample ID: 180-36441-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A038.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 2208			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND	UJ	50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-5 LANGAN**

Lab Sample ID: 180-36441-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A028.d
Dilution:	10			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 1936			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	1300	D	100	100

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-103**

Lab Sample ID: 180-36441-2
Client Matrix: Solid

Date Sampled: 09/04/2014 1220
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76937	Lab File ID:	R091014C2001.d
Dilution:	1.0			Initial Weight/Volume:	10.11 g
Analysis Date:	09/11/2014 0847			Final Weight/Volume:	20 mL
Prep Date:	09/08/2014 1330			Injection Volume:	50 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL	RL
m-Benzenedisulfonic acid		340	J	20	20
p-Phenolsulfonic acid		ND		20	20
Benzenesulfonic acid		ND	UJ	20	20
Resorcinol		~~ND~~	R	~~20~~	~~20~~
2,3',4-Trihydroxydiphenyl		~~ND~~	R	~~59~~	~~59~~

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-4 LANGAN**

Lab Sample ID: 180-36441-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A042.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 2306			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-4 LANGAN**

Lab Sample ID: 180-36441-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A034.d
Dilution:	10			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 2106			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	1300	D	100	100

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-102**

Lab Sample ID: 180-36441-4
Client Matrix: Solid

Date Sampled: 09/04/2014 1310
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76937	Lab File ID:	R091014C2013.d
Dilution:	1.0			Initial Weight/Volume:	10.16 g
Analysis Date:	09/11/2014 1146			Final Weight/Volume:	20 mL
Prep Date:	09/08/2014 1330			Injection Volume:	50 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL	RL
p-Phenolsulfonic acid		ND	UJ	20	20
Benzenesulfonic acid		33	J	20	20
Resorcinol		~~ND~~	R	~~20~~	~~20~~
2,3',4-Trihydroxydiphenyl		~~ND~~	R	~~59~~	~~59~~

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-102**

Lab Sample ID: 180-36441-4
Client Matrix: Solid

Date Sampled: 09/04/2014 1310
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77002	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76937	Lab File ID:	R090914B3002.d
Dilution:	20			Initial Weight/Volume:	10.16 g
Analysis Date:	09/11/2014 0138			Final Weight/Volume:	20 mL
Prep Date:	09/08/2014 1330			Injection Volume:	50 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL	RL
m-Benzenedisulfonic acid		5000	D	390	390

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-3 LANGAN**

Lab Sample ID: 180-36441-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A048.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0036			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	70		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-3 LANGAN**

Lab Sample ID: 180-36441-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A020.d
Dilution:	15			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 1737			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	1700	D	150	150

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SED-101**

Lab Sample ID: 180-36441-6
Client Matrix: Solid

Date Sampled: 09/04/2014 1400
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76937	Lab File ID:	R091014C2017.d
Dilution:	1.0			Initial Weight/Volume:	10.25 g
Analysis Date:	09/11/2014 1246			Final Weight/Volume:	20 mL
Prep Date:	09/08/2014 1330			Injection Volume:	50 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL	RL
m-Benzenedisulfonic acid		140	J	20	20
p-Phenolsulfonic acid		~~ND~~	R	~~20~~	~~20~~
Benzenesulfonic acid		ND	* UJ	20	20
Resorcinol		~~ND~~	R	~~20~~	~~20~~
2,3',4-Trihydroxydiphenyl		~~ND~~	R	~~59~~	~~59~~

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36441-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A052.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0137			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	120		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36441-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A024.d
Dilution:	15			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 1837			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	1900	D	150	150

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36441-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A056.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0236			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	120		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36441-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A014.d
Dilution:	20			Initial Weight/Volume:	4 mL
Analysis Date:	09/09/2014 1607			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	2400	D	200	200

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-6**

Lab Sample ID: 180-36441-9
Client Matrix: Water

Date Sampled: 09/04/2014 1600
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A062.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0405			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	130		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-2 LANGAN**

Lab Sample ID: 180-36441-10

Client Matrix: Water

Date Sampled: 09/04/2014 1615

Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A066.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0505			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	130		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1 LANGAN**

Lab Sample ID: 180-36441-11
Client Matrix: Water

Date Sampled: 09/04/2014 1630
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77000	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R090914A070.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/10/2014 0605			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	130		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090414**

Lab Sample ID: 180-36441-12
Client Matrix: Solid

Date Sampled: 09/04/2014 0000
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76937	Lab File ID:	R091014C2028.d
Dilution:	1.0			Initial Weight/Volume:	10.30 g
Analysis Date:	09/11/2014 1535			Final Weight/Volume:	20 mL
Prep Date:	09/08/2014 1330			Injection Volume:	50 uL

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	RL	RL
m-Benzenedisulfonic acid		160	J R	19	19
p-Phenolsulfonic acid		~~ND~~		~~19~~	~~19~~
Benzenesulfonic acid		ND	~~R~~ UJ	19	19
Resorcinol		~~ND~~	R	~~19~~	~~19~~
2,3',4-Trihydroxydiphenyl		~~ND~~	R	~~58~~	~~58~~

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D011.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 1919			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	150		50	50
Benzenesulfonic acid	54		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-4**

Lab Sample ID: 180-36441-13
Client Matrix: Water

Date Sampled: 09/05/2014 0955
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091014C002.d
Dilution:	25			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 0507			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	3700	D	250	250

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D021.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 2148			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	180		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-3**

Lab Sample ID: 180-36441-14
Client Matrix: Water

Date Sampled: 09/05/2014 1030
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D003.d
Dilution:	20			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 1720			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	3100	D	200	200

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D025.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 2248			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	550		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	300		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-8**

Lab Sample ID: 180-36441-15
Client Matrix: Water

Date Sampled: 09/05/2014 1100
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D007.d
Dilution:	10			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 1821			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	1000	D	100	100

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SW-1**

Lab Sample ID: 180-36441-16
Client Matrix: Water

Date Sampled: 09/05/2014 1105
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D030.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 0018			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	100		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-2**

Lab Sample ID: 180-36441-17
Client Matrix: Water

Date Sampled: 09/05/2014 1145
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D034.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 0118			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	110		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SH-1**

Lab Sample ID: 180-36441-18
Client Matrix: Water

Date Sampled: 09/05/2014 1215
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77108	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091114D038.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 0217			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	110		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND	UJ	50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **SG-1**

Lab Sample ID: 180-36441-19
Client Matrix: Water

Date Sampled: 09/05/2014 1225
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77192	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091214B004.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 1537			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	120		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **EB090514**

Lab Sample ID: 180-36441-20
Client Matrix: Water

Date Sampled: 09/05/2014 1230
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77192	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091214B008.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 1637			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	ND		50	50
p-Phenolsulfonic acid	ND		50	50
Benzenesulfonic acid	ND		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77192	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091214B012.d
Dilution:	5.0			Initial Weight/Volume:	4 mL
Analysis Date:	09/12/2014 1736			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
p-Phenolsulfonic acid	240		50	50
Benzenesulfonic acid	51		50	50
Resorcinol	ND		50	50
2,3',4-Trihydroxydiphenyl	ND		50	50

Client: ARCADIS U.S. Inc

Job Number: 180-36441-1

Client Sample ID: **DUP090514**

Lab Sample ID: 180-36441-21
Client Matrix: Water

Date Sampled: 09/05/2014 0000
Date Received: 09/06/2014 0915

In-House Sulfonic Acids by LCMS/MS

Analysis Method:	In-House	Analysis Batch:	200-77003	Instrument ID:	LC3062B
Prep Method:	In House	Prep Batch:	200-76950	Lab File ID:	R091014C010.d
Dilution:	25			Initial Weight/Volume:	4 mL
Analysis Date:	09/11/2014 0707			Final Weight/Volume:	4 mL
Prep Date:	09/08/2014 1245			Injection Volume:	50 uL

Analyte	Result (ug/L)	Qualifier	RL	RL
m-Benzenedisulfonic acid	3200	D	250	250

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SW-5 Langan**

Lab Sample ID: 180-36402-1
Client Matrix: Water

Date Sampled: 09/04/2014 1125
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111477	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	2I08J19.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/08/2014 1944			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc | Job Number: 180-36402-1

Client Sample ID: **Sed-103**

Lab Sample ID: 180-36402-2 | Date Sampled: 09/04/2014 1220
Client Matrix: Solid | % Moisture: 18.1 | Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111534	Instrument ID:	CHLCJ
Prep Method:	8315_S_Prep	Prep Batch:	640-111503	Lab File ID:	1I10J7.d
Dilution:	1.0			Initial Weight/Volume:	20.1 g
Analysis Date:	09/10/2014 1415			Final Weight/Volume:	4.0 mL
Prep Date:	09/10/2014 0730			Injection Volume:	10 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Formaldehyde		510		95	120

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SW-4 Langan**

Lab Sample ID: 180-36402-3
Client Matrix: Water

Date Sampled: 09/04/2014 1235
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111477	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	2I08J20.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/08/2014 1956			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc Job Number: 180-36402-1

Client Sample ID: **Sed-102**

Lab Sample ID: 180-36402-4 Date Sampled: 09/04/2014 1310
Client Matrix: Solid % Moisture: 24.7 Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111534	Instrument ID:	CHLCJ
Prep Method:	8315_S_Prep	Prep Batch:	640-111503	Lab File ID:	1I10J8.d
Dilution:	1.0			Initial Weight/Volume:	20.1 g
Analysis Date:	09/10/2014 1427			Final Weight/Volume:	4.0 mL
Prep Date:	09/10/2014 0730			Injection Volume:	10 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Formaldehyde		130		100	130

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SW-3 Langan**

Lab Sample ID: 180-36402-5
Client Matrix: Water

Date Sampled: 09/04/2014 1320
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111477	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	2I08J21.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/08/2014 2007			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc Job Number: 180-36402-1

Client Sample ID: **Sed-101**

Lab Sample ID: 180-36402-6 Date Sampled: 09/04/2014 1400
Client Matrix: Solid % Moisture: 17.9 Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111534	Instrument ID:	CHLCJ
Prep Method:	8315_S_Prep	Prep Batch:	640-111503	Lab File ID:	1I10J11.d
Dilution:	1.0			Initial Weight/Volume:	20.0 g
Analysis Date:	09/10/2014 1503			Final Weight/Volume:	4.0 mL
Prep Date:	09/10/2014 0730			Injection Volume:	10 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Formaldehyde		390		95	120

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SG-7**

Lab Sample ID: 180-36402-7
Client Matrix: Water

Date Sampled: 09/04/2014 1430
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111477	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	2I08J22.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/08/2014 2019			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND		5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SG-5**

Lab Sample ID: 180-36402-8
Client Matrix: Water

Date Sampled: 09/04/2014 1515
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	1I09J8.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1145			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	14	J H	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SG-6**

Lab Sample ID: 180-36402-9
Client Matrix: Water

Date Sampled: 09/04/2014 1600
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	1I09J9.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1157			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	ND	~~H~~ UJ	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SW-2 Langan**

Lab Sample ID: 180-36402-10
Client Matrix: Water

Date Sampled: 09/04/2014 1615
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	1I09J10.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1209			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	5.5	J ~~H~~	5.0	50

Client: ARCADIS U.S. Inc

Job Number: 180-36402-1

Client Sample ID: **SW-1 Langan**

Lab Sample ID: 180-36402-11
Client Matrix: Water

Date Sampled: 09/04/2014 1630
Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111485	Instrument ID:	CHLCJ
Prep Method:	8315_W_Prep	Prep Batch:	640-111423	Lab File ID:	1I09J11.d
Dilution:	1.0			Initial Weight/Volume:	100 mL
Analysis Date:	09/09/2014 1221			Final Weight/Volume:	4.0 mL
Prep Date:	09/05/2014 1015			Injection Volume:	10 uL

Analyte	Result (ug/L)	Qualifier	MDL	RL
Formaldehyde	7.0	J H	5.0	50

Client: ARCADIS U.S. Inc Job Number: 180-36402-1

Client Sample ID: **DUP 090414**

Lab Sample ID: 180-36402-12 Date Sampled: 09/04/2014 0000
Client Matrix: Solid % Moisture: 17.0 Date Received: 09/05/2014 1049

8315A Carbonyl Compounds (HPLC)

Analysis Method:	8315A	Analysis Batch:	640-111534	Instrument ID:	CHLCJ
Prep Method:	8315_S_Prep	Prep Batch:	640-111503	Lab File ID:	1I10J12.d
Dilution:	1.0			Initial Weight/Volume:	20.4 g
Analysis Date:	09/10/2014 1514			Final Weight/Volume:	4.0 mL
Prep Date:	09/10/2014 0730			Injection Volume:	10 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Formaldehyde		690		92	120

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Data Review

PETROLIA, PENNSYLVANIA

Volatile and Miscellaneous analyses

SDG #: 180-39575

Analyses Performed By:
TestAmerica Laboratories
Pittsburgh, PA
Burlington, VT
Tallahassee, FL

Report #: 22965R
Review Level: Tier III
Project: B0039303.0001.00001

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 180-39575 and 180-36402-1 for samples collected in association with the INDSPEC site in Petrolia, PA. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody.

Overall, the quality control data, as defined in the USEPA SW-846 Methods 8260B/8260C/8270C/8315A and laboratory performance criteria, were within the guidelines specified in the method with the exception of those deviations specifically mentioned in this review. The data validation resulted in a number of detect/non-detect sample results being qualified as estimated (J/UJ) respectively due to minor QC failures, or qualified as non-detect (UB) due to associated quality assurance (QA) blanks (i.e., method, field blanks) contamination. Additionally, several non-detected sample results were qualified as rejected (R) due to major QC failures; m-Benzenedisulfonic acid, p-Phenolsulfonic acid, Benzenesulfonic acid, Resorcinol and 2,3',4-Trihydroxydiphenyl associated with SED-103; Resorcinol and 2,3',4-Trihydroxydiphenyl associated with sediment samples SED-101 and SED-102; and 2,3',4-Trihydroxydiphenyl associated with sediment sample DUP120314 were qualified as rejected due to matrix spike recovery deviations. With the exception of the major QC deviations listed here, all the data associated with this sampling event are usable for the intended purpose.

Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	GRO	DRO	MISC
SW-5_LANGAN	180-39575-1	Water	12/3/2014		X				X
SED-103	180-39575-2	Sediment	12/3/2014		X				X
SW-4_LANGAN	180-39575-3	Water	12/3/2014		X				X
SED-102	180-39575-4	Sediment	12/3/2014		X				X
SW-3_LANGAN	180-39575-5	Water	12/3/2014		X				X
SED-101	180-39575-6	Sediment	12/3/2014		X				X
DUP120314	180-39575-7	Sediment	12/3/2014	SED-101	X				X
SG-7	180-39575-8	Water	12/3/2014		X				X
SG-5	180-39575-9	Water	12/3/2014		X				X
SG-4	180-39575-10	Water	12/4/2014		X				X
SG-3	180-39575-11	Water	12/4/2014		X				X
DUP120414	180-39575-12	Water	12/4/2014	SG-3	X				X
SG-8	180-39575-13	Water	12/4/2014		X				X
SW-1	180-39575-14	Water	12/4/2014		X				X
SG-2	180-39575-15	Water	12/4/2014		X				
SH-1	180-39575-16	Water	12/4/2014		X				X
SG-1	180-39575-17	Water	12/4/2014		X				X
SG-6	180-39575-18	Water	12/4/2014		X				X
SW-2_LANGAN	180-39575-19	Water	12/4/2014		X				X

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis				
					VOC	SVOC	GRO	DRO	MISC
SW-1_LANGAN	180-39575-20	Water	12/4/2014		X				X
FB120414	180-39575-21	Water	12/4/2014		X				X
TRIP BLANK	180-39575-22	Water	12/4/2014		X				X

Notes:

1. Miscellaneous analyses include formaldehyde, sulfate and site specific COCs (m-Benzenedisulfonic acid, p-Phenolsulfonic acid, Benzenesulfonic acid, Resorcinol and 2,3',4-Trihydroxydiphenyl). Additionally, Phenols were analyzed for water samples.
2. Sulfonic Acid analysis was performed by TestAmerica Burlington.
3. Formaldehyde analysis was performed by TestAmerica Tallahassee.
4. VOCs and Sulfate analyses were performed by TestAmerica Pittsburgh; the Lab IDs listed above reflect those assigned by TestAmerica Pittsburgh.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Collection Technique (grab, composite, etc.)		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of QA or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

QA - Quality Assurance

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Methods 8260B, 8260C, 8270C, 8315A and the LCMS/MS method for Sulfonic Acids based on TestAmerica-Burlington's SOP BR-LC-005. Data were reviewed in accordance with USEPA National Functional Guidelines of October 1999 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected as unusable. The compound may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and

provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260	Water	14 days from collection to analysis	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e. laboratory method blanks, trip blanks, and equipment rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure sample storage contamination. Rinse blanks also measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SED-103	Methylene chloride (MB)	Detected sample results >RL and <BAL	"UB" at detected sample concentration
SED-102 SED-101 DUP120314	Methylene chloride (MB)	Detected sample results <RL and <BAL	"UB" at the RL

RL Reporting limit
MB Method blank

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SED-101 SED-102 SED-103 DUP120314	CCV %D	Methyl Acetate	-25.5%
		Methylene chloride	21.3%
		Trichlorofluoromethane	23.3%
SG-4 SH-1 SG-1 SG-6 SW-2_LANGAN SW-1_LANGAN TRIP BLANK	ICV %RSD	Methylene chloride	20.0%
		cis-1,3-Dichloropropane	16.0%
SG-4 TRIP BLANK	CCV %D	Bromomethane	-25.9%
		Bromoform	20.4%
SH-1 SG-1 SG-6 SW-2_LANGAN SW-1_LANGAN		Chloromethane	30.2%
		Bromomethane	-20.5%
		2-Hexanone	28.8%
		Carbon tetrachloride	28.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SED-102	1,1,2,2-Tetrachloroethane	<LL but >10%	<LL but >10%
	1,1,2-Trichloroethane	>UL	>UL
	1,2,4-Trichlorobenzene	<LL but >10%	AC
	2-Hexanone	>UL	>UL
	Benzene	>UL	AC
	Bromoform	<LL but >10%	AC
	Chloroethane	>UL	>UL
	Methylcyclohexane	>UL	>UL
	Trichlorofluoromethane	>UL	>UL
	Vinyl chloride	>UL	>UL
	Cyclohexane	AC	>UL

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

8. Laboratory Control Sample (LCS) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

Sample locations associated with LCS analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery
SED-101 SED-102 SED-103 DUP120314	trans-1,3-Dichloropropane	<LL but >10%

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SG-3/ DUP120414	1,2-Dichlorobenzene	1.5	1.4	AC
	1,4-Dichlorobenzene	0.27 J	0.29 J	AC
	Acetone	3.2 J	5.0 U	AC
	Benzene	0.11 J	1.0 U	AC
	Chlorobenzene	0.98 J	0.97 J	AC
	Ethyl ether	1.6	1.6	AC
SED-101/ DUP120314	1,2-Dichlorobenzene	1.3 J	2.1 J	AC
	Ethyl ether	11	13	AC
	Carbon disulfide	6.0 U	1.5 J	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks		X		X	
C. Trip blanks		X		X	
Laboratory Control Sample (LCS)		X	X		
Laboratory Control Sample Duplicate(LCSD)					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS)		X	X		
Matrix Spike Duplicate(MSD)		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	

VOCs: SW-846 8260	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMI-VOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6°C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria requires the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD exhibited acceptable recoveries and RPD between the MS/MSD recoveries.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SG-3/ DUP120414	Phenol	0.93 U	0.93 U	AC

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCs

SVOCs: SW-846 8270	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Field blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate(MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field Duplicate (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present				X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SITE SPECIFIC COCs (m-Benzenedisulfonic acid, p-Phenolsulfonic acid, Benzenesulfonic acid, Resorcinol and 2,3',4-Trihydroxydiphenyl)

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
LCMS/MS method for Site-Specific COCs based on TestAmerica-Burlington's SOP BR-LC-005	Water	7 days from collection to analysis	Cool to <6 °C.
	Soil	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/Continuing	Compound	Criteria
SED-103 SED-102	CCV %D	p-Phenolsulfonic acid	40.8%
		Benzenesulfonic acid	53.4%
		Resorcinol	60.9%
		2,3',4-Trihydroxydiphenyl	66.2%
SED-101	CCV %D	p-Phenolsulfonic acid	28.2%
		Benzenesulfonic acid	41.2%
		Resorcinol	56.7%
		2,3',4-Trihydroxydiphenyl	77.6%
DUP120314	CCV %D	Resorcinol	32.7%
		2,3',4-Trihydroxydiphenyl	72.2%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SED-103	m-Benzenedisulfonic acid	<10%	NA
	p-Phenolsulfonic acid	<10%	NA
	Benzenesulfonic acid	<10%	NA
	Resorcinol	<10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA
SW-4_LANGAN	p-Phenolsulfonic acid	>UL	NA
SED-102	p-Phenolsulfonic acid	AC	<LL but >10%
	Benzenesulfonic acid	<LL but >10%	<LL but >10%
	Resorcinol	<10%	<10%
	2,3',4-Trihydroxydiphenyl	<10%	<10%
SW-3_LANGAN	2,3',4-Trihydroxydiphenyl	>UL	NA
SED-101	Resorcinol	<10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA
DUP120314	Resorcinol	<LL but >10%	NA
	2,3',4-Trihydroxydiphenyl	<10%	NA
SG-7	2,3',4-Trihydroxydiphenyl	>UL	NA
DUP120414	p-Phenolsulfonic acid	>UL	NA
	2,3',4-Trihydroxydiphenyl	>UL	NA

AC Acceptable
NA Not Analyzed

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action
	Non-detect	

Please note the laboratory analyzed a matrix spike (MS) on every sample associated with this SDG. This additional measure of quality control was adopted by the laboratory as there is no surrogate standard or internal standard used for this analysis. The MS is being used as a measure of accuracy for the analysis. The sediment sample matrix spikes generally exhibited recoveries below ten percent Resorcinol and 2,3',4-Trihydroxydiphenyl, and SED-103 exhibited recoveries below ten percent for all site specific COCs. The low matrix spike recovery demonstrates a loss of these compounds due to sample matrix interference. The Lab Control Samples (LCS) associated with these samples generally exhibited acceptable recoveries. Compounds exhibiting recovery less than ten percent in the matrix spike that were non-detect in the associated parent sample were qualified as rejected (R).

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SG-3/ DUP120414	m-Benzenedisulfonic acid	3100	2600	17.5%
	p-Phenolsulfonic acid	160	160	0%
	Benzenesulfonic acid	27 J	20 J	AC
	Resorcinol	440	430	2.3%
SED-101/ DUP120314	m-Benzenedisulfonic acid	85000	85000	0%
	p-Phenolsulfonic acid	7200	7400	2.7%
	Benzenesulfonic acid	850	870	2.3%

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Low Laboratory Control Sample (LCS/LLCS) Analysis

The LCS/LLCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LLCS analysis must exhibit a percent recovery between the control limits of 60% and 140%.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
SED-101 SED-102 SED-103 DUP120314	2,3',4-Trihydroxydiphenyl	>UL	NA

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

The laboratory analyzed a Low Laboratory Control Sample (LLCS) that was spiked at a concentration at or below the reporting limit. The LLCS recoveries were not evaluated as a measure of accuracy.

7. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SED-101	m-Benzenedisulfonic acid	--	85000	85000 D
	p-Phenolsulfonic acid	--	7200	7200 D
	Benzenesulfonic acid	--	850	850 D
DUP120314	m-Benzenedisulfonic acid	--	85000	85000 D
	p-Phenolsulfonic acid	--	7400	7400 D
	Benzenesulfonic acid	--	870	870 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SULFONIC ACID

Site Specific COCs: LCMS/MS method based on TestAmerica-Burlington's SOP BR-LC-005	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X	X		
Low Laboratory Control Sample (LCS) %R		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X	X		
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

FORMALDEHYDE ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Formaldehyde by SW846 8315A	Water	3 days from collection to derivatization and 3 days from derivatization to analysis	Cool to <6 °C
	Soil	14 Days to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited a concentration less than the MDL, with the exception of the compounds listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following sample locations were qualified as listed in the following table.

Sample Locations	Analytes	Sample Result	Qualification
SG-7 SG-5 SG-4 SG-3 DUP120414 SG-8 SW-1 SG-2 SH-1 SG-1 SG-6 SW-2_LANGAN SW-1_LANGAN	Formaldehyde (FB)	Detected sample results <RL and <BAL	"UB" at the RL

RL Reporting limit
FB Field Blank

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Sample locations associated with the MS/MSD exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Compound	MS Recovery	MSD Recovery
SED-102	Formaldehyde	<10%	<10%

AC Acceptable

The criteria used to evaluate the MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Parent sample concentration > four times the MS/MSD spiking solution concentration.	Detect	No Action

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SG-3/ DUP120414	Formaldehyde	50 UB	50 UB	AC
SED-101/ DUP120314	Formaldehyde	1100	560	65.1%

AC Acceptable
U Not detected

The compound Formaldehyde associated with sample locations SED-101 and DUP120314 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR FORMALDEHYDE

Formaldehyde: SW846 8315A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks		X	X		
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X	X		
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 300.0. Data were reviewed in accordance with USEPA National Functional Guidelines of July 2002 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.

  B The reported value was obtained from a reading less than the contract-required detection limit (CRDL), but greater than or equal to the instrument detection limit (IDL).

- Quantitation (Q) Qualifiers

  E The reported value is estimated due to the presence of interference.

  N Spiked sample recovery is not within control limits.

  * Duplicate analysis is not within control limits.

- Validation Qualifiers

  J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The analyte was not detected above the reported sample detection limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.

  J+ The result is an estimated quantity, but the result may be biased high.

  J- The result is an estimated quantity, but the result may be biased low.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict

QC serves to increase confidence in data but any value potentially contains error.

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Sulfate by EPA 300.0	Water	28 days from collection to analysis	Cool to <6 °C.
	Soil	28 days from collection to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to insure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis exhibited recoveries and RPD within the control limits.

4.2 Laboratory Duplicate Analysis

The laboratory duplicate relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to 5 times the CRDL. A control limit of 20% for water matrices and 35% for soil matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the CRDL, a control limit of one times the CRDL is applied for water matrices and two times the CRDL for soil matrices.

MS/MSD analysis was performed instead of the laboratory duplicate analysis. The MS/MSD recoveries exhibited acceptable RPDs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices and 50% for soil matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the reporting limit (RL), a control limit of two times the RL is applied for water matrices or three times the RL is applied for soil matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SG-3/ DUP120414	Sulfate	82	80	2.5%
SED-101/ DUP120314	Sulfate	1600	1500	6.5%

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit a percent recovery between the control limits of 80% and 120%.

All analytes associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 300.0	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
C. Instrument blanks		X		X	
D. Method blanks		X		X	
E. Equipment blanks		X		X	
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Field/Lab Duplicate (RPD)		X		X	
Dilution Factor		X		X	
Moisture Content		X		X	
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation, %R - percent recovery, RPD - relative percent difference, %D – difference

Validation Performed By: Jeffrey L. Davin

Signature: 

Date: January 13, 2015

Peer Review: Dennis Capria

Date:

CHAIN OF CUSTODY/LABORAOTRY QUALIFIER DEFINITIONS/ CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica Pittsburgh

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Chain of Custody Record

063926

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210 (0713)

Client Contact	Project Manager: Mark Hanish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks			Lab Sampling:
Project Name: Indspec - petrolia	☐ 1 week			
Site:	☐ 2 days Standard			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	8260D - project VOA	Sulfate	Phenol (8270) ms/msd			Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X			
Sed-103	12/3/14	1100	C	sed	3				X	X			
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X			
Sed-102	12/3/14	1120	C	sed	9		Y		X	X	X		
SW-3_Langan	12/3/14	1140	G	W	6			X	X	X			
Sed-101	12/3/14	1200	C	sed	3				X	X			
Dup120314	12/3/14	—	C	sed	3				X	X			
SG-7	12/3/14	1220	G	W	6			X	X	X			
SG-5	12/3/14	1235	G	W	6			X	X	X			
SG-4	12/4/14	0955	G	W	18		Y	X	X	X	X		
SG-3	12/4/14	1020	G	W	6			X	X	X			
Dup120414	12/4/14	—	G	W	6			X	X	X			

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

180-39575 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____		
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14 1745	Received by:	Company: FedEx	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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12/2016

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Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berta	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks			Lab Sampling:
Project Name: Indspec - Petrolia PA	☐ 1 week ☐ 2 days Standard ☐ 1 day			Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12-4-14	1045	G	W	6			X	X	X	
SW-1	12-4-14	1055	G	W	6			X	X	X	
SG-2	12-4-14	1115	G	W	6			X	X	X	
SH-1	12-4-14	1130	G	W	6			X	X	X	
SG-1	12-4-14	1140	G	W	6			X	X	X	
SG-6	12-4-14	1300	G	W	6			X	X	X	
SW-2_Langan	12-4-14	1310	G	W	6			X	X	X	
SW-1_Langan	12-4-14	1320	G	W	6			X	X	X	
FB120414	12-4-14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____		Therm ID No.: _____
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14/1745	Received by:	Company: TAL PGH	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Pittsburgh
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Pittsburgh, PA 15238
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Chain of Custody Record

063926

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days Standard ☐ 1 day			Lab Sampling:
Project Name: Indspec - petrolia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	Phenol (8270) ms/msd				Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X				
Sed-103	12/3/14	1100	C	Sed	3				X	X				
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X				
Sed-102	12/3/14	1120	C	Sed	9		Y		X	X	X			
SW-3_Langan	12/3/14	1140	G	W	6			X	X	X				
Sed-101	12/3/14	1200	C	Sed	3				X	X				
Dup120314	12/3/14	—	C	Sed	3				X	X				
SG-7	12/3/14	1220	G	W	6			X	X	X				
SG-5	12/3/14	1235	G	W	6			X	X	X				
SG-4	12/4/14	0955	G	W	18		Y	X	X	X	X			
SG-3	12/4/14	1020	G	W	6			X	X	X				
Dup120414	12/4/14	—	G	W	6			X	X	X				

180-39575 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: CMS Bonessi	Company: Arcadis	Date/Time: 12-4-14 1745	Received by:	Company: FedEx	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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12/2015

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Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berti	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days Standard ☐ 1 day			Lab Sampling:
Project Name: Indspec - Petrolia PA				Job / SDG No.:
Site:				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12-4-14	1045	G	W	6			X	X	X	
SW-1	12-4-14	1055	G	W	6			X	X	X	
SG-2	12-4-14	1115	G	W	6			X	X	X	
SH-1	12-4-14	1130	G	W	6			X	X	X	
SG-1	12-4-14	1140	G	W	6			X	X	X	
SG-6	12-4-14	1300	G	W	6			X	X	X	
SW-2_Langan	12-4-14	1310	G	W	6			X	X	X	
SW-1_Langan	12-4-14	1320	G	W	6			X	X	X	
FB120414	12-4-14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

Preservation Used: 1= Ice, 2= HCl, 3= H_2SO_4, 4= HNO_3, 5=NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ | Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12-4-14/1745			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TA Pgh	12/5/14 930
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

TestAmerica Pittsburgh
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Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

063924

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210 (0713)

Client Contact	Project Manager: Mark Hamish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berta	Carrier: Fedex	1 of 1 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below ____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week Standard ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: INDSPEC, Petrolia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260B - project VOA MS/MSD												Sample Specific Notes:
Sed-103	12/4/14	1100	C	sed	3		N	X												Hold
Sed-102	12/4/14	1120	C	sed	9		Y	X	X											Hold
Sed-101	12/4/14	1200	C	sed	3		N	X												Hold
Dup120314	12/4/14	—	C	sed	3		N	X												Hold

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:			
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14/1745	Received by:	Company: TAPyt	Date/Time: 12/5/14 930	
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:	
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:	

Chain of Custody Record

Plastic 250 amber

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratory location: Burlington

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact				
Company Name: Arcadis	Client Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Lab Contact: V Bortot / Kathrine Kelly	COC No:
Address: 6041 Wallace Rd Ext suite 300	Telephone: 724 742 9180	Telephone: 724 312 2021	Telephone:	2 of 2 COCs
City/State/Zip: Wexford PA 15090	Email: Mark.Hanish@arcadis-us.com	Analysis Turnaround Time (in BUS days)	Analyses	For lab use only
Phone: 724 742 9180		TAT if different from below ____		Walk-in client: ☐
Project Name: Indspec - Petrolia PA	Method of Shipment/Carrier: Fedex	☐ 3 weeks ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day (Standard)		Lab sampling: ☐
Project Number:	Shipping/Tracking No:			Job/SDG No.:
PO #				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Unpres	Other: Amber	Filtered Sample (Y/N)	Composite (C) / Grab (G)	SVOA TICs	Sample Specific Notes / Special Instructions:
SG-8	12/4/14	1045		X										X		G	X	
SW-1	12/4/14	1055		X										X		G	X	
SG-2	12/4/14	1115		X										X		G	X	
SH-1	12/4/14	1130		X										X		G	X	
SG-1	12/4/14	1140		X										X		G	X	
SG-6	12/4/14	1300		X										X		G	X	
SW-2_Langan	12/4/14	1310		X										X		G	X	
SW-1_Langan	12/4/14	1320		X										X		G	X	
FB120414	12/4/14	1440		X										X		G	X	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☒ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12.4.14 / 1745		TAL BTV	12/5/14 945
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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TAL-0018 (1008)

TestAmerica Pittsburgh
301 Alpha Drive

Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

063926

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: C Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Bortot	Carrier: FedEx	1 of 2 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks			Lab Sampling:
Project Name: Indspec - petrolia	☐ 1 week			
Site:	☐ 2 days Standard			Job / SDG No.:
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	Phenol (8270) ms/msd		Sample Specific Notes:
SW-5_Langan	12/3/14	1045	G	W	6			X	X	X		
Sed-103	12/3/14	1100	C	Sed	3				X	X		
SW-4_Langan	12/3/14	1110	G	W	6			X	X	X		
Sed-102	12/3/14	1120	C	Sed	9		Y		X	X	X	
SW-3_Langan	12/3/14	1140	G	W	6			X	X	X		
Sed-101	12/3/14	1200	C	Sed	3				X	X		
Dup 120314	12/3/14	—	C	Sed	3				X	X		
SG-7	12/3/14	1220	G	W	6			X	X	X		
SG-5	12/3/14	1235	G	W	6			X	X	X		
SG-4	12/4/14	0955	G	W	18		Y	X	X	X	X	
SG-3	12/4/14	1020	G	W	6			X	X	X		
Dup 120414	12/4/14	—	G	W	6			X	X	X		

180-39575 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____		
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14 1745	Received by:	Company: TAPT	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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01/12/2015

TestAmerica Pittsburgh

301 Alpha Drive
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Phone: 412.963.7058 Fax: 412.963.2470

Chain of Custody Record

063925

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hanish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berlin	Carrier: Fedex	2 of 2 COCs
Address: 6041 Wallace Rd Ext suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below _____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week ☐ 2 days Standard ☐ 1 day			Lab Sampling:
Project Name: Indspec - Petrolia PA				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260 - project VOA	Sulfate	phenol (8270)	Sample Specific Notes:
SG-8	12-4-14	1045	G	W	6			X	X	X	
SW-1	12-4-14	1055	G	W	6			X	X	X	
SG-2	12-4-14	1115	G	W	6			X	X	X	
SH-1	12-4-14	1130	G	W	6			X	X	X	
SG-1	12-4-14	1140	G	W	6			X	X	X	
SG-6	12-4-14	1300	G	W	6			X	X	X	
SW-2_Langan	12-4-14	1310	G	W	6			X	X	X	
SW-1_Langan	12-4-14	1320	G	W	6			X	X	X	
FB120414	12-4-14	1440	G	W	6			X	X	X	
Trip Blank	—	—	G	W	2			X			

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Chris Bonessi	Arcadis	12-4-14/1745			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

05/12/2015

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Pittsburgh, PA 15238
Phone: 412.963.7058 Fax: 412.963.2478

Chain of Custody Record

063924

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Mark Hamish	Site Contact: Chris Bonessi	Date: 12-4-14	COC No:
Company Name: Arcadis	Tel/Fax: 724 742 9180	Lab Contact: Veronica Berta	Carrier: Fedex	1 of 1 COCs
Address: 6041 Wallace Rd Ext Suite 300	Analysis Turnaround Time			Sampler:
City/State/Zip: Wexford, PA 15090	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 724 742 9180	TAT if different from Below ____			Walk-in Client:
Fax: 724 742 9189	☐ 2 weeks ☐ 1 week Standard ☐ 2 days ☐ 1 day			Lab Sampling:
Project Name: INDSPEC, Petrolia				Job / SDG No.:
Site:				
P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	8260B - project VOA MS/MSD		Sample Specific Notes:
Sed-103	12/4/14	1100	C	Sed	3	N	Y	X		Hold
Sed-102	12/4/14	1120	C	Sed	9	N	Y	X	X	Hold
Sed-101	12/4/14	1200	C	Sed	3	N	Y	X		Hold
Dup120314	12/4/14	—	C	Sed	3	N	Y	X		Hold

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☒ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____		
Relinquished by: Chris Bonessi	Company: Arcadis	Date/Time: 12-4-14/1745	Received by:	Company: TAPT	Date/Time: 12/5/14 930
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
*	LCS or LCSD exceeds the control limits
F1	MS and/or MSD Recovery exceeds the control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery exceeds the control limits
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery exceeds the control limits
*	LCS or LCSD exceeds the control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
E	Result exceeded calibration range.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: ARCADIS U.S. Inc
Project/Site: INDSPEC, Petrolia PA

TestAmerica Job ID: 180-39575-1

Client Sample ID: SW-5_LANGAN
Date Collected: 12/03/14 10:45
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 12:44	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 12:44	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 12:44	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 12:44	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 12:44	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 12:44	1
1,2-Dichlorobenzene	**0.63**	**J**	1.0	0.15	ug/L			12/16/14 12:44	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 12:44	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 12:44	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 12:44	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 12:44	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 12:44	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 12:44	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 12:44	1
Acetone	**2.5**	**J**	5.0	2.5	ug/L			12/16/14 12:44	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 12:44	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 12:44	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 12:44	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Chlorobenzene	**0.34**	**J**	1.0	0.14	ug/L			12/16/14 12:44	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 12:44	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 12:44	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 12:44	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 12:44	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 12:44	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 12:44	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 12:44	1
Ethyl ether	**8.6**		1.0	0.082	ug/L			12/16/14 12:44	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 12:44	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 12:44	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 12:44	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 12:44	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 12:44	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 12:44	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 12:44	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 12:44	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 12:44	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 12:44	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 12:44	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 12:44	1

Client Sample ID: SW-5_LANGAN

Lab Sample ID: 180-39575-1

Date Collected: 12/03/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*64 - 135*		*12/16/14 12:44*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 12:44*	*1*
Dibromofluoromethane (Surr)	*107*		*70 - 128*		*12/16/14 12:44*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 12:44*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 12:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*79*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
2-Fluorobiphenyl	*63*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
2-Fluorophenol	*55*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Nitrobenzene-d5	*62*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Phenol-d5	*55*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*
Terphenyl-d14	*62*		*10 - 150*	*12/09/14 08:31*	*12/10/14 12:21*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**84**		1.0	0.21	mg/L			12/20/14 20:20	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:17	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**890**		50	18	ug/L		12/09/14 15:47	12/10/14 13:27	10
p-Phenolsulfonic acid	**97**		50	8.4	ug/L		12/09/14 15:47	12/10/14 13:27	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 13:27	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 13:27	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 13:27	10

Client Sample ID: SED-103

Lab Sample ID: 180-39575-2

Date Collected: 12/03/14 11:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 85.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		5.8	0.57	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2,2-Tetrachloroethane	ND		5.8	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1,2-Trichloroethane	ND		5.8	0.97	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1-Dichloroethane	ND		5.8	0.67	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,1-Dichloroethene	ND		5.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2,4-Trichlorobenzene	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dibromo-3-Chloropropane	ND		5.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichlorobenzene	ND		5.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichloroethane	ND		5.8	0.72	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dichloropropane	ND		5.8	0.63	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,3-Dichlorobenzene	ND		5.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1

Client Sample ID: SED-103
Date Collected: 12/03/14 11:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-2
Matrix: Solid
Percent Solids: 85.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		5.8	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
2-Butanone (MEK)	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
2-Hexanone	ND		5.8	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.8	0.76	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Acetone	ND		23	5.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Benzene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Bromoform	ND		5.8	0.52	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Bromomethane	ND		5.8	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Carbon disulfide	**1.4**	**J**	5.8	0.60	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Carbon tetrachloride	ND		5.8	0.52	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chlorobenzene	ND		5.8	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chlorodibromomethane	ND		5.8	0.83	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloroethane	ND		5.8	1.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloroform	ND		5.8	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Chloromethane	ND		5.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
cis-1,2-Dichloroethene	ND		5.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
cis-1,3-Dichloropropene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Cyclohexane	ND		5.8	0.43	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Dichlorobromomethane	ND		5.8	0.66	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Dichlorodifluoromethane	ND		5.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Ethyl ether	**8.1**		5.8	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Ethylbenzene	ND		5.8	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
1,2-Dibromoethane	ND		5.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Isopropylbenzene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methyl acetate	ND	J	5.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methyl tert-butyl ether	ND		5.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methylcyclohexane	ND		5.8	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Methylene Chloride	**6.1**	**B** UB	5.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Styrene	ND		5.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Tetrachloroethene	ND		5.8	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Toluene	ND		5.8	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
trans-1,2-Dichloroethene	ND		5.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
trans-1,3-Dichloropropene	ND	J	5.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Trichloroethene	ND		5.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Trichlorofluoromethane	ND		5.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1
Vinyl chloride	ND		5.8	0.55	ug/Kg	☼	12/10/14 05:05	12/10/14 09:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*52 - 124*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
4-Bromofluorobenzene (Surr)	*87*		*63 - 120*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
Dibromofluoromethane (Surr)	*91*		*68 - 121*	*12/10/14 05:05*	*12/10/14 09:22*	*1*
Toluene-d8 (Surr)	*102*		*72 - 127*	*12/10/14 05:05*	*12/10/14 09:22*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**290**		11	2.4	mg/Kg	☼		12/24/14 11:28	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**270**		120	90	ug/Kg	☼	12/08/14 07:45	12/10/14 09:37	1

Client Sample ID: SED-103

Lab Sample ID: 180-39575-2

Date Collected: 12/03/14 11:00

Matrix: Solid

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	~~ND~~	R	~~20~~	~~20~~	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
p-Phenolsulfonic acid	~~ND~~	R	~~20~~	~~20~~	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
Benzenesulfonic acid	~~ND~~ *	R	~~20~~	~~20~~	ug/Kg		12/08/14 15:50	12/09/14 23:29	2
Resorcinol	~~ND~~	R	~~400~~	~~400~~	ug/Kg		12/08/14 15:50	12/09/14 20:23	40
2,3',4-Trihydroxydiphenyl	~~ND~~ *	R	~~1200~~	~~1200~~	ug/Kg		12/08/14 15:50	12/09/14 20:23	40

Client Sample ID: SW-4_LANGAN

Lab Sample ID: 180-39575-3

Date Collected: 12/03/14 11:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 15:56	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 15:56	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 15:56	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 15:56	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 15:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 15:56	1
1,2-Dichlorobenzene	**0.75**	**J**	1.0	0.15	ug/L			12/16/14 15:56	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 15:56	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 15:56	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 15:56	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 15:56	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 15:56	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 15:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 15:56	1
Acetone	**2.6**	**J**	5.0	2.5	ug/L			12/16/14 15:56	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 15:56	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 15:56	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 15:56	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Chlorobenzene	**0.45**	**J**	1.0	0.14	ug/L			12/16/14 15:56	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 15:56	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 15:56	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 15:56	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 15:56	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 15:56	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 15:56	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 15:56	1
Ethyl ether	**8.1**		1.0	0.082	ug/L			12/16/14 15:56	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 15:56	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 15:56	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 15:56	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 15:56	1

Client Sample ID: SW-4_LANGAN

Date Collected: 12/03/14 11:10
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 15:56	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 15:56	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 15:56	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 15:56	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 15:56	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 15:56	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 15:56	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*12/16/14 15:56*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 118*		*12/16/14 15:56*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 15:56*	*1*
Toluene-d8 (Surr)	*97*		*71 - 118*		*12/16/14 15:56*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*83*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
2-Fluorobiphenyl	*73*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
2-Fluorophenol	*62*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Nitrobenzene-d5	*70*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Phenol-d5	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*
Terphenyl-d14	*73*		*10 - 150*	*12/09/14 08:31*	*12/10/14 12:50*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**83**		1.0	0.21	mg/L			12/20/14 20:55	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:29	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**550**		50	18	ug/L		12/09/14 15:47	12/10/14 13:59	10
p-Phenolsulfonic acid	**73**	J	50	8.4	ug/L		12/09/14 15:47	12/10/14 13:59	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 13:59	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 13:59	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 13:59	10

Client Sample ID: SED-102

Date Collected: 12/03/14 11:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-4

Matrix: Solid
Percent Solids: 73.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.8	0.66	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2,2-Tetrachloroethane	ND	J	6.8	0.98	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.8	1.5	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1,2-Trichloroethane	ND		6.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1-Dichloroethane	ND		6.8	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,1-Dichloroethene	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2,4-Trichlorobenzene	ND	J	6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dibromo-3-Chloropropane	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichlorobenzene	**3.0**	**J**	6.8	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichloroethane	ND		6.8	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dichloropropane	ND		6.8	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,3-Dichlorobenzene	ND		6.8	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,4-Dichlorobenzene	ND		6.8	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
2-Butanone (MEK)	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
2-Hexanone	ND		6.8	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
4-Methyl-2-pentanone (MIBK)	ND		6.8	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Acetone	ND		27	6.8	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Benzene	**17**	**J**	6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Bromoform	ND	J	6.8	0.60	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Bromomethane	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Carbon disulfide	ND		6.8	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Carbon tetrachloride	ND		6.8	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chlorobenzene	**2.3**	**J**	6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chlorodibromomethane	ND		6.8	0.97	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloroethane	ND		6.8	2.1	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloroform	ND		6.8	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Chloromethane	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
cis-1,2-Dichloroethene	ND		6.8	0.96	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
cis-1,3-Dichloropropene	ND		6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Cyclohexane	**11**	**J**	6.8	0.51	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Dichlorobromomethane	ND		6.8	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Dichlorodifluoromethane	ND		6.8	0.91	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Ethyl ether	ND		6.8	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Ethylbenzene	**3.1**	**J**	6.8	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
1,2-Dibromoethane	ND		6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Isopropylbenzene	**2.0**	**J**	6.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methyl acetate	ND	J	6.8	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methyl tert-butyl ether	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methylcyclohexane	**48**	**J**	6.8	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Methylene Chloride	6.8 ~~4.6~~	~~J B~~ UB	6.8	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Styrene	ND		6.8	0.96	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Tetrachloroethene	ND		6.8	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Toluene	ND		6.8	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
trans-1,2-Dichloroethene	ND		6.8	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
trans-1,3-Dichloropropene	ND	* J	6.8	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Trichloroethene	ND		6.8	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Trichlorofluoromethane	ND		6.8	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1
Vinyl chloride	ND		6.8	0.64	ug/Kg	☼	12/10/14 05:05	12/10/14 07:07	1

Client Sample ID: SED-102

Date Collected: 12/03/14 11:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-4

Matrix: Solid
Percent Solids: 73.3

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*74*		*52 - 124*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
4-Bromofluorobenzene (Surr)	*79*		*63 - 120*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
Dibromofluoromethane (Surr)	*90*		*68 - 121*	*12/10/14 05:05*	*12/10/14 07:07*	*1*
Toluene-d8 (Surr)	*108*		*72 - 127*	*12/10/14 05:05*	*12/10/14 07:07*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**140**		130	29	mg/Kg	☼		12/24/14 11:43	10

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**1100**	J	140	110	ug/Kg	☼	12/08/14 07:45	12/10/14 09:49	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**400**		20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
p-Phenolsulfonic acid	ND	J	20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
Benzenesulfonic acid	ND	J	20	20	ug/Kg		12/08/14 15:50	12/09/14 23:51	2
Resorcinol	~~ND~~	R	~~400~~	~~400~~	ug/Kg		12/08/14 15:50	12/09/14 20:56	40
2,3',4-Trihydroxydiphenyl	~~ND~~	R	~~1200~~	~~1200~~	ug/Kg		12/08/14 15:50	12/09/14 20:56	40

Client Sample ID: SW-3_LANGAN

Date Collected: 12/03/14 11:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:21	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:21	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:21	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:21	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:21	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:21	1
1,2-Dichlorobenzene	**0.76**	J	1.0	0.15	ug/L			12/16/14 16:21	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:21	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:21	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:21	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:21	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:21	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:21	1
Acetone	**3.8**	J	5.0	2.5	ug/L			12/16/14 16:21	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:21	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:21	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:21	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:21	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Chlorobenzene	**0.42**	J	1.0	0.14	ug/L			12/16/14 16:21	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:21	1

Client Sample ID: SW-3_LANGAN

Date Collected: 12/03/14 11:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:21	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:21	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:21	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:21	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:21	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:21	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:21	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:21	1
Ethyl ether	**13**		1.0	0.082	ug/L			12/16/14 16:21	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:21	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:21	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:21	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:21	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:21	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:21	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:21	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:21	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:21	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:21	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:21	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*12/16/14 16:21*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 16:21*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*12/16/14 16:21*	*1*
Toluene-d8 (Surr)	*96*		*71 - 118*		*12/16/14 16:21*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 13:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*69*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
2-Fluorobiphenyl	*51*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
2-Fluorophenol	*38*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Nitrobenzene-d5	*45*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Phenol-d5	*42*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*
Terphenyl-d14	*71*		*10 - 150*	*12/09/14 08:31*	*12/10/14 13:18*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**84**		1.0	0.21	mg/L			12/20/14 22:39	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	ND		50	5.0	ug/L		12/05/14 10:51	12/08/14 13:41	1

Client Sample ID: SW-3_LANGAN

Lab Sample ID: 180-39575-5

Date Collected: 12/03/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2300**		50	18	ug/L		12/09/14 15:47	12/10/14 14:21	10
p-Phenolsulfonic acid	**270**		50	8.4	ug/L		12/09/14 15:47	12/10/14 14:21	10
Benzenesulfonic acid	**12**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 14:21	10
Resorcinol	**21**	**J**	50	5.9	ug/L		12/09/14 15:47	12/10/14 14:21	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 14:21	10

Client Sample ID: SED-101

Lab Sample ID: 180-39575-6

Date Collected: 12/03/14 12:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 83.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.0	0.58	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2,2-Tetrachloroethane	ND		6.0	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.0	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1,2-Trichloroethane	ND		6.0	0.99	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1-Dichloroethane	ND		6.0	0.69	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,1-Dichloroethene	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2,4-Trichlorobenzene	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dibromo-3-Chloropropane	ND		6.0	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichlorobenzene	**1.3**	**J**	6.0	0.95	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichloroethane	ND		6.0	0.73	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dichloropropane	ND		6.0	0.65	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,3-Dichlorobenzene	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,4-Dichlorobenzene	ND		6.0	0.76	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
2-Butanone (MEK)	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
2-Hexanone	ND		6.0	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
4-Methyl-2-pentanone (MIBK)	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Acetone	ND		24	6.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Benzene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Bromoform	ND		6.0	0.53	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Bromomethane	ND		6.0	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Carbon disulfide	ND		6.0	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Carbon tetrachloride	ND		6.0	0.53	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chlorobenzene	ND		6.0	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chlorodibromomethane	ND		6.0	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloroethane	ND		6.0	1.8	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloroform	ND		6.0	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Chloromethane	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
cis-1,2-Dichloroethene	ND		6.0	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
cis-1,3-Dichloropropene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Cyclohexane	ND		6.0	0.44	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Dichlorobromomethane	ND		6.0	0.67	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Dichlorodifluoromethane	ND		6.0	0.79	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Ethyl ether	**11**		6.0	0.70	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Ethylbenzene	ND		6.0	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
1,2-Dibromoethane	ND		6.0	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Isopropylbenzene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methyl acetate	ND	J	6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methyl tert-butyl ether	ND		6.0	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1

Client Sample ID: SED-101

Lab Sample ID: 180-39575-6

Date Collected: 12/03/14 12:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 83.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		6.0	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Methylene Chloride	6.0 ~~4.5~~	~~J B~~ UB	6.0	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Styrene	ND		6.0	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Tetrachloroethene	ND		6.0	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Toluene	ND		6.0	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
trans-1,2-Dichloroethene	ND		6.0	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
trans-1,3-Dichloropropene	ND ~~*~~	J	6.0	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Trichloroethene	ND		6.0	0.78	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Trichlorofluoromethane	ND		6.0	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1
Vinyl chloride	ND		6.0	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 09:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*52 - 124*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
4-Bromofluorobenzene (Surr)	*83*		*63 - 120*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
Dibromofluoromethane (Surr)	*92*		*68 - 121*	*12/10/14 05:05*	*12/10/14 09:44*	*1*
Toluene-d8 (Surr)	*100*		*72 - 127*	*12/10/14 05:05*	*12/10/14 09:44*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1600**	~~B~~	12	2.5	mg/Kg	☼		12/30/14 02:22	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**1100**	J	120	92	ug/Kg	☼	12/08/14 07:45	12/10/14 10:24	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**85000**	D	990	990	ug/Kg		12/08/14 15:50	12/09/14 21:51	100
p-Phenolsulfonic acid	**7200**	DJ	400	400	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
Benzenesulfonic acid	**850** ~~*~~	DJ	400	400	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
Resorcinol	~~ND~~	R	~~400~~	~~400~~	ug/Kg		12/08/14 15:50	12/09/14 22:01	40
2,3',4-Trihydroxydiphenyl	~~ND *~~	R	~~1200~~	~~1200~~	ug/Kg		12/08/14 15:50	12/09/14 22:01	40

Client Sample ID: DUP120314

Lab Sample ID: 180-39575-7

Date Collected: 12/03/14 00:00

Matrix: Solid

Date Received: 12/05/14 18:40

Percent Solids: 79.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		6.3	0.61	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2,2-Tetrachloroethane	ND		6.3	0.90	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		6.3	1.3	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1,2-Trichloroethane	ND		6.3	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1-Dichloroethane	ND		6.3	0.72	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,1-Dichloroethene	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2,4-Trichlorobenzene	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dibromo-3-Chloropropane	ND		6.3	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichlorobenzene	**2.1**	J	6.3	1.0	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichloroethane	ND		6.3	0.77	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dichloropropane	ND		6.3	0.68	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,3-Dichlorobenzene	ND		6.3	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1

Client Sample ID: DUP120314
Date Collected: 12/03/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-7
Matrix: Solid
Percent Solids: 79.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		6.3	0.80	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
2-Butanone (MEK)	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
2-Hexanone	ND		6.3	0.87	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
4-Methyl-2-pentanone (MIBK)	ND		6.3	0.82	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Acetone	ND		25	6.3	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Benzene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Bromoform	ND		6.3	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Bromomethane	ND		6.3	0.93	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Carbon disulfide	**1.5**	**J**	6.3	0.64	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Carbon tetrachloride	ND		6.3	0.56	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chlorobenzene	ND		6.3	0.95	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chlorodibromomethane	ND		6.3	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloroethane	ND		6.3	1.9	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloroform	ND		6.3	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Chloromethane	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
cis-1,2-Dichloroethene	ND		6.3	0.88	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
cis-1,3-Dichloropropene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Cyclohexane	ND		6.3	0.47	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Dichlorobromomethane	ND		6.3	0.71	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Dichlorodifluoromethane	ND		6.3	0.84	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Ethyl ether	**13**		6.3	0.74	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Ethylbenzene	ND		6.3	0.81	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
1,2-Dibromoethane	ND		6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Isopropylbenzene	ND		6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methyl acetate	ND	J	6.3	1.1	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methyl tert-butyl ether	ND		6.3	0.94	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methylcyclohexane	ND		6.3	0.91	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Methylene Chloride	6.3 ~~5.5~~	~~J B~~ UB	6.3	0.85	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Styrene	ND		6.3	0.89	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Tetrachloroethene	ND		6.3	0.86	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Toluene	ND		6.3	0.92	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
trans-1,2-Dichloroethene	ND		6.3	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
trans-1,3-Dichloropropene	ND	~~-~~ J	6.3	0.75	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Trichloroethene	ND		6.3	0.83	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Trichlorofluoromethane	ND		6.3	1.2	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1
Vinyl chloride	ND		6.3	0.59	ug/Kg	☼	12/10/14 05:05	12/10/14 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*78*		*52 - 124*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
4-Bromofluorobenzene (Surr)	*81*		*63 - 120*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
Dibromofluoromethane (Surr)	*93*		*68 - 121*	*12/10/14 05:05*	*12/10/14 10:06*	*1*
Toluene-d8 (Surr)	*105*		*72 - 127*	*12/10/14 05:05*	*12/10/14 10:06*	*1*

Method: 300.0 - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1500**	~~B~~	12	2.7	mg/Kg	☼		12/30/14 02:38	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**560**	J	130	98	ug/Kg	☼	12/08/14 07:45	12/10/14 10:36	1

Client Sample ID: DUP120314

Date Collected: 12/03/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-7

Matrix: Solid

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**85000**	D	990	990	ug/Kg		12/08/14 15:50	12/09/14 22:34	100
p-Phenolsulfonic acid	**7400**	D	390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
Benzenesulfonic acid	**870** *	D	390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
Resorcinol	ND	J	390	390	ug/Kg		12/08/14 15:50	12/09/14 22:56	40
2,3',4-Trihydroxydiphenyl	~~ND~~ *	R	~~1200~~	~~1200~~	ug/Kg		12/08/14 15:50	12/09/14 22:56	40

Client Sample ID: SG-7

Date Collected: 12/03/14 12:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-8

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:45	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:45	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:45	1
1,2-Dichlorobenzene	**0.83**	J	1.0	0.15	ug/L			12/16/14 16:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:45	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:45	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:45	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:45	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:45	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:45	1
Acetone	**4.1**	J	5.0	2.5	ug/L			12/16/14 16:45	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:45	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:45	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 16:45	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:45	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Chlorobenzene	**0.49**	J	1.0	0.14	ug/L			12/16/14 16:45	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:45	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:45	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:45	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:45	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 16:45	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:45	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:45	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:45	1
Ethyl ether	**12**		1.0	0.082	ug/L			12/16/14 16:45	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:45	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:45	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:45	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:45	1

Client Sample ID: SG-7
Date Collected: 12/03/14 12:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-8
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:45	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 16:45	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:45	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:45	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:45	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:45	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:45	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*64 - 135*		*12/16/14 16:45*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 118*		*12/16/14 16:45*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 128*		*12/16/14 16:45*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 16:45*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 13:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*84*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
2-Fluorobiphenyl	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
2-Fluorophenol	*50*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Nitrobenzene-d5	*56*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Phenol-d5	*51*		*30 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*
Terphenyl-d14	*80*		*10 - 150*	*12/09/14 08:31*	*12/10/14 13:46*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**79**		1.0	0.21	mg/L			12/22/14 14:47	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~6.3~~	J UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 13:53	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**440**		50	18	ug/L		12/09/14 15:47	12/10/14 14:43	10
p-Phenolsulfonic acid	**45**	**J**	50	8.4	ug/L		12/09/14 15:47	12/10/14 14:43	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 14:43	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 14:43	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 14:43	10

Client Sample ID: SG-5

Date Collected: 12/03/14 12:35
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-9

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:09	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:09	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:09	1
1,2-Dichlorobenzene	**1.0**		1.0	0.15	ug/L			12/16/14 17:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:09	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:09	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:09	1
1,4-Dichlorobenzene	**0.23**	**J**	1.0	0.21	ug/L			12/16/14 17:09	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:09	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:09	1
Acetone	**3.4**	**J**	5.0	2.5	ug/L			12/16/14 17:09	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:09	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:09	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:09	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Chlorobenzene	**0.63**	**J**	1.0	0.14	ug/L			12/16/14 17:09	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:09	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:09	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:09	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:09	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:09	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:09	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:09	1
Ethyl ether	**5.8**		1.0	0.082	ug/L			12/16/14 17:09	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:09	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:09	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:09	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:09	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:09	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:09	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:09	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:09	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:09	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:09	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:09	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:09	1

Client Sample ID: SG-5

Lab Sample ID: 180-39575-9

Date Collected: 12/03/14 12:35

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*64 - 135*		*12/16/14 17:09*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 17:09*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 17:09*	*1*
Toluene-d8 (Surr)	*99*		*71 - 118*		*12/16/14 17:09*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/09/14 08:31	12/10/14 14:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*83*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
2-Fluorobiphenyl	*69*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
2-Fluorophenol	*56*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Nitrobenzene-d5	*64*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Phenol-d5	*57*		*30 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*
Terphenyl-d14	*79*		*10 - 150*	*12/09/14 08:31*	*12/10/14 14:14*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**78**		1.0	0.21	mg/L			12/20/14 23:48	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~6.0~~	J UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 14:04	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2300**		50	18	ug/L		12/09/14 15:47	12/10/14 15:15	10
p-Phenolsulfonic acid	**210**		50	8.4	ug/L		12/09/14 15:47	12/10/14 15:15	10
Benzenesulfonic acid	**13**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 15:15	10
Resorcinol	**170**		50	5.9	ug/L		12/09/14 15:47	12/10/14 15:15	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 15:15	10

Client Sample ID: SG-4

Lab Sample ID: 180-39575-10

Date Collected: 12/04/14 09:55

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/15/14 13:43	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/15/14 13:43	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/15/14 13:43	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/15/14 13:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/15/14 13:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/15/14 13:43	1
1,2-Dichlorobenzene	**1.1**		1.0	0.15	ug/L			12/15/14 13:43	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/15/14 13:43	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/15/14 13:43	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/15/14 13:43	1

Client Sample ID: SG-4
Date Collected: 12/04/14 09:55
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-10
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	**0.25**	**J**	1.0	0.21	ug/L			12/15/14 13:43	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/15/14 13:43	1
2-Hexanone	ND		5.0	0.16	ug/L			12/15/14 13:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/15/14 13:43	1
Acetone	ND		5.0	2.5	ug/L			12/15/14 13:43	1
Benzene	ND		1.0	0.11	ug/L			12/15/14 13:43	1
Bromoform	ND		1.0	0.19	ug/L			12/15/14 13:43	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/15/14 13:43	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/15/14 13:43	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Chlorobenzene	**0.75**	**J**	1.0	0.14	ug/L			12/15/14 13:43	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Chloroethane	ND		1.0	0.21	ug/L			12/15/14 13:43	1
Chloroform	ND		1.0	0.17	ug/L			12/15/14 13:43	1
Chloromethane	ND		1.0	0.28	ug/L			12/15/14 13:43	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/15/14 13:43	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/15/14 13:43	1
Cyclohexane	ND		1.0	0.25	ug/L			12/15/14 13:43	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/15/14 13:43	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/15/14 13:43	1
Ethyl ether	**1.1**		1.0	0.082	ug/L			12/15/14 13:43	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/15/14 13:43	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/15/14 13:43	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/15/14 13:43	1
Methyl acetate	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/15/14 13:43	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/15/14 13:43	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/15/14 13:43	1
Styrene	ND		1.0	0.097	ug/L			12/15/14 13:43	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/15/14 13:43	1
Toluene	ND		1.0	0.15	ug/L			12/15/14 13:43	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/15/14 13:43	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/15/14 13:43	1
Trichloroethene	ND		1.0	0.14	ug/L			12/15/14 13:43	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/15/14 13:43	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/15/14 13:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*64 - 135*		*12/15/14 13:43*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/15/14 13:43*	*1*
Dibromofluoromethane (Surr)	*99*		*70 - 128*		*12/15/14 13:43*	*1*
Toluene-d8 (Surr)	*104*		*71 - 118*		*12/15/14 13:43*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*82*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
2-Fluorobiphenyl	*74*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*

Client Sample ID: SG-4

Date Collected: 12/04/14 09:55
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-10

Matrix: Water

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*55*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Nitrobenzene-d5	*72*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Phenol-d5	*57*		*30 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*
Terphenyl-d14	*61*		*10 - 150*	*12/10/14 08:24*	*12/11/14 17:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**79**		1.0	0.21	mg/L			12/22/14 13:28	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~8.5~~	J UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 14:16	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2700**		50	18	ug/L		12/09/14 15:47	12/10/14 15:38	10
p-Phenolsulfonic acid	**220**		50	8.4	ug/L		12/09/14 15:47	12/10/14 15:38	10
Benzenesulfonic acid	**23**	J	50	7.0	ug/L		12/09/14 15:47	12/10/14 15:38	10
Resorcinol	**420**		50	5.9	ug/L		12/09/14 15:47	12/10/14 15:38	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 15:38	10

Client Sample ID: SG-3

Date Collected: 12/04/14 10:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-11

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:33	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:33	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:33	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:33	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:33	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:33	1
1,2-Dichlorobenzene	**1.5**		1.0	0.15	ug/L			12/16/14 17:33	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:33	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:33	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:33	1
1,4-Dichlorobenzene	**0.27**	J	1.0	0.21	ug/L			12/16/14 17:33	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:33	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:33	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:33	1
Acetone	**3.2**	J	5.0	2.5	ug/L			12/16/14 17:33	1
Benzene	**0.11**	J	1.0	0.11	ug/L			12/16/14 17:33	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:33	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:33	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Chlorobenzene	**0.98**	J	1.0	0.14	ug/L			12/16/14 17:33	1

Client Sample ID: SG-3
Date Collected: 12/04/14 10:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-11
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:33	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:33	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:33	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:33	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:33	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:33	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:33	1
Ethyl ether	**1.6**		1.0	0.082	ug/L			12/16/14 17:33	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:33	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:33	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:33	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:33	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:33	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:33	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:33	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:33	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:33	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:33	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:33	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*64 - 135*		*12/16/14 17:33*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:33*	*1*
Dibromofluoromethane (Surr)	*101*		*70 - 128*		*12/16/14 17:33*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 17:33*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*87*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
2-Fluorobiphenyl	*72*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
2-Fluorophenol	*64*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Nitrobenzene-d5	*70*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Phenol-d5	*67*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*
Terphenyl-d14	*62*		*10 - 150*	*12/10/14 08:24*	*12/11/14 18:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**82**		1.0	0.21	mg/L			12/21/14 00:23	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~8.7 J~~ UB		50	5.0	ug/L		12/05/14 10:51	12/08/14 14:52	1

Client Sample ID: SG-3

Lab Sample ID: 180-39575-11

Date Collected: 12/04/14 10:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**3100**		50	18	ug/L		12/09/14 15:47	12/10/14 16:21	10
p-Phenolsulfonic acid	**160**		50	8.4	ug/L		12/09/14 15:47	12/10/14 16:21	10
Benzenesulfonic acid	**27**	**J**	50	7.0	ug/L		12/09/14 15:47	12/10/14 16:21	10
Resorcinol	**440**		50	5.9	ug/L		12/09/14 15:47	12/10/14 16:21	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 16:21	10

Client Sample ID: DUP120414

Lab Sample ID: 180-39575-12

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:57	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:57	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:57	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:57	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:57	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:57	1
1,2-Dichlorobenzene	**1.4**		1.0	0.15	ug/L			12/16/14 17:57	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:57	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:57	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:57	1
1,4-Dichlorobenzene	**0.29**	**J**	1.0	0.21	ug/L			12/16/14 17:57	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:57	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:57	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:57	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:57	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:57	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:57	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 17:57	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:57	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Chlorobenzene	**0.97**	**J**	1.0	0.14	ug/L			12/16/14 17:57	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:57	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:57	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:57	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:57	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 17:57	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:57	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:57	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:57	1
Ethyl ether	**1.6**		1.0	0.082	ug/L			12/16/14 17:57	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:57	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:57	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:57	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:57	1

Client Sample ID: DUP120414
Date Collected: 12/04/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-12
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:57	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 17:57	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:57	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:57	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:57	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:57	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:57	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 135*		*12/16/14 17:57*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:57*	*1*
Dibromofluoromethane (Surr)	*103*		*70 - 128*		*12/16/14 17:57*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 17:57*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 18:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*102*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
2-Fluorobiphenyl	*79*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
2-Fluorophenol	*65*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Nitrobenzene-d5	*75*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Phenol-d5	*65*		*30 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*
Terphenyl-d14	*80*		*10 - 150*	*12/10/14 08:24*	*12/11/14 18:49*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**80**		1.0	0.21	mg/L			12/21/14 00:57	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~3.1~~ J UB		50	5.0	ug/L		12/05/14 10:51	12/08/14 15:15	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**2600**		50	18	ug/L		12/09/14 15:47	12/10/14 16:43	10
p-Phenolsulfonic acid	**160**	J	50	8.4	ug/L		12/09/14 15:47	12/10/14 16:43	10
Benzenesulfonic acid	**20**	J	50	7.0	ug/L		12/09/14 15:47	12/10/14 16:43	10
Resorcinol	**430**		50	5.9	ug/L		12/09/14 15:47	12/10/14 16:43	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 16:43	10

Client Sample ID: SG-8

Date Collected: 12/04/14 10:45
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-13

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 18:45	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 18:45	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 18:45	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 18:45	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 18:45	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 18:45	1
1,2-Dichlorobenzene	**1.0**		1.0	0.15	ug/L			12/16/14 18:45	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 18:45	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 18:45	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 18:45	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 18:45	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 18:45	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 18:45	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 18:45	1
Acetone	**3.1**	**J**	5.0	2.5	ug/L			12/16/14 18:45	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 18:45	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 18:45	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 18:45	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Chlorobenzene	**0.65**	**J**	1.0	0.14	ug/L			12/16/14 18:45	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 18:45	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 18:45	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 18:45	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 18:45	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 18:45	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 18:45	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 18:45	1
Ethyl ether	**0.49**	**J**	1.0	0.082	ug/L			12/16/14 18:45	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 18:45	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 18:45	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 18:45	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 18:45	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 18:45	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 18:45	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 18:45	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 18:45	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 18:45	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 18:45	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 18:45	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 18:45	1

Client Sample ID: SG-8

Lab Sample ID: 180-39575-13

Date Collected: 12/04/14 10:45

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*64 - 135*		*12/16/14 18:45*	*1*
4-Bromofluorobenzene (Surr)	*109*		*70 - 118*		*12/16/14 18:45*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 18:45*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 18:45*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	**0.50**	**J**	0.93	0.051	ug/L		12/10/14 08:24	12/11/14 19:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*97*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
2-Fluorobiphenyl	*78*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
2-Fluorophenol	*68*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Nitrobenzene-d5	*74*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Phenol-d5	*71*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*
Terphenyl-d14	*68*		*10 - 150*	*12/10/14 08:24*	*12/11/14 19:13*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**77**		1.0	0.21	mg/L			12/21/14 01:32	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~7.0~~ **J** UB		50	5.0	ug/L		12/05/14 10:51	12/08/14 15:27	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**190**		50	18	ug/L		12/09/14 15:47	12/10/14 17:17	10
p-Phenolsulfonic acid	**94**		50	8.4	ug/L		12/09/14 15:47	12/10/14 17:17	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 17:17	10
Resorcinol	**540**		50	5.9	ug/L		12/09/14 15:47	12/10/14 17:17	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 17:17	10

Client Sample ID: SW-1

Lab Sample ID: 180-39575-14

Date Collected: 12/04/14 10:55

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 19:09	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 19:09	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 19:09	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 19:09	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 19:09	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 19:09	1
1,2-Dichlorobenzene	**0.70**	**J**	1.0	0.15	ug/L			12/16/14 19:09	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 19:09	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 19:09	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 19:09	1

Client Sample ID: SW-1
Date Collected: 12/04/14 10:55
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-14
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 19:09	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 19:09	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 19:09	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 19:09	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 19:09	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 19:09	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 19:09	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 19:09	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Chlorobenzene	**0.32**	**J**	1.0	0.14	ug/L			12/16/14 19:09	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 19:09	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 19:09	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 19:09	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 19:09	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 19:09	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 19:09	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 19:09	1
Ethyl ether	**0.26**	**J**	1.0	0.082	ug/L			12/16/14 19:09	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 19:09	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 19:09	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 19:09	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 19:09	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 19:09	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 19:09	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 19:09	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 19:09	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 19:09	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 19:09	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 19:09	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 19:09	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 19:09	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 19:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*64 - 135*		*12/16/14 19:09*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 118*		*12/16/14 19:09*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 19:09*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 19:09*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:24	12/11/14 19:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*102*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
2-Fluorobiphenyl	*90*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*

Client Sample ID: SW-1

Date Collected: 12/04/14 10:55
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-14

Matrix: Water

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*79*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Nitrobenzene-d5	*88*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Phenol-d5	*80*		*30 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*
Terphenyl-d14	*79*		*10 - 150*	*12/10/14 08:24*	*12/11/14 19:37*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/21/14 02:07	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~8.6~~ **J** UB		50	5.0	ug/L		12/05/14 10:51	12/08/14 15:39	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**88**		50	18	ug/L		12/09/14 15:47	12/10/14 17:38	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 17:38	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 17:38	10
Resorcinol	**450**		50	5.9	ug/L		12/09/14 15:47	12/10/14 17:38	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 17:38	10

Client Sample ID: SG-2

Date Collected: 12/04/14 11:15
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-15

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 19:34	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 19:34	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 19:34	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 19:34	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 19:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 19:34	1
1,2-Dichlorobenzene	**0.69**	**J**	1.0	0.15	ug/L			12/16/14 19:34	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 19:34	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 19:34	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 19:34	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 19:34	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 19:34	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 19:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 19:34	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 19:34	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 19:34	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 19:34	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 19:34	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Chlorobenzene	**0.18**	**J**	1.0	0.14	ug/L			12/16/14 19:34	1

Client Sample ID: SG-2

Date Collected: 12/04/14 11:15
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-15

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 19:34	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 19:34	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 19:34	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 19:34	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 19:34	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 19:34	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 19:34	1
Ethyl ether	**0.17**	**J**	1.0	0.082	ug/L			12/16/14 19:34	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 19:34	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 19:34	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 19:34	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 19:34	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 19:34	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 19:34	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 19:34	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 19:34	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 19:34	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 19:34	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 19:34	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 19:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*64 - 135*		*12/16/14 19:34*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/16/14 19:34*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 128*		*12/16/14 19:34*	*1*
Toluene-d8 (Surr)	*93*		*71 - 118*		*12/16/14 19:34*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*86*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
2-Fluorobiphenyl	*83*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
2-Fluorophenol	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Nitrobenzene-d5	*69*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Phenol-d5	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*
Terphenyl-d14	*59*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:05	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~41~~ J UB		50	5.0	ug/L		12/05/14 10:51	12/08/14 15:51	1

Client Sample ID: SG-2

Lab Sample ID: 180-39575-15

Date Collected: 12/04/14 11:15

Matrix: Water

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**88**		50	18	ug/L		12/09/14 15:47	12/10/14 18:00	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:00	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:00	10
Resorcinol	**390**		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:00	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:00	10

Client Sample ID: SH-1

Lab Sample ID: 180-39575-16

Date Collected: 12/04/14 11:30

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 15:48	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 15:48	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 15:48	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 15:48	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 15:48	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 15:48	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 15:48	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 15:48	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 15:48	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 15:48	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 15:48	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 15:48	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 15:48	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 15:48	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 15:48	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 15:48	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/16/14 15:48	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 15:48	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 15:48	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 15:48	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 15:48	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 15:48	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/16/14 15:48	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 15:48	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 15:48	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 15:48	1
Ethyl ether	**0.10**	**J**	1.0	0.082	ug/L			12/16/14 15:48	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 15:48	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 15:48	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 15:48	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 15:48	1

Client Sample ID: SH-1
Date Collected: 12/04/14 11:30
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-16
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 15:48	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/16/14 15:48	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 15:48	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 15:48	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 15:48	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 15:48	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 15:48	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 15:48*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 118*		*12/16/14 15:48*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 15:48*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/16/14 15:48*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*89*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
2-Fluorobiphenyl	*80*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
2-Fluorophenol	*63*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Nitrobenzene-d5	*74*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Phenol-d5	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*
Terphenyl-d14	*61*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:22	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~11~~ J	UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:02	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**90**		50	18	ug/L		12/09/14 15:47	12/10/14 18:33	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:33	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:33	10
Resorcinol	**350**		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:33	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:33	10

Client Sample ID: SG-1

Lab Sample ID: 180-39575-17

Date Collected: 12/04/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:12	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:12	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:12	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:12	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:12	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:12	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:12	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:12	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:12	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:12	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 16:12	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:12	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:12	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/16/14 16:12	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:12	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:12	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:12	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:12	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:12	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/16/14 16:12	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:12	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:12	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:12	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 16:12	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:12	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:12	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:12	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:12	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:12	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/16/14 16:12	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:12	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:12	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:12	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:12	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:12	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:12	1

Client Sample ID: SG-1

Lab Sample ID: 180-39575-17

Date Collected: 12/04/14 11:40

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 16:12*	*1*
4-Bromofluorobenzene (Surr)	*99*		*70 - 118*		*12/16/14 16:12*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 16:12*	*1*
Toluene-d8 (Surr)	*102*		*71 - 118*		*12/16/14 16:12*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 20:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*80*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
2-Fluorobiphenyl	*73*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
2-Fluorophenol	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Nitrobenzene-d5	*72*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Phenol-d5	*68*		*30 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*
Terphenyl-d14	*51*		*10 - 150*	*12/10/14 08:26*	*12/11/14 20:49*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**74**		1.0	0.21	mg/L			12/22/14 15:39	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~42~~ J	UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:14	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 18:55	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 18:55	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 18:55	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 18:55	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 18:55	10

Client Sample ID: SG-6

Lab Sample ID: 180-39575-18

Date Collected: 12/04/14 13:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 16:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 16:36	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 16:36	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 16:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 16:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 16:36	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 16:36	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 16:36	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 16:36	1

Client Sample ID: SG-6
Date Collected: 12/04/14 13:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-18
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 16:36	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 16:36	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 16:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 16:36	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 16:36	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 16:36	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 16:36	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/16/14 16:36	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 16:36	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 16:36	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 16:36	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 16:36	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 16:36	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/16/14 16:36	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 16:36	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 16:36	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 16:36	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 16:36	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 16:36	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 16:36	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 16:36	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 16:36	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 16:36	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/16/14 16:36	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 16:36	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 16:36	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 16:36	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 16:36	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 16:36	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 16:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*64 - 135*		*12/16/14 16:36*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 118*		*12/16/14 16:36*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 16:36*	*1*
Toluene-d8 (Surr)	*100*		*71 - 118*		*12/16/14 16:36*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 21:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*66*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
2-Fluorobiphenyl	*56*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*

Client Sample ID: SG-6

Lab Sample ID: 180-39575-18

Date Collected: 12/04/14 13:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*50*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Nitrobenzene-d5	*55*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Phenol-d5	*49*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*
Terphenyl-d14	*44*		*10 - 150*	*12/10/14 08:26*	*12/11/14 21:13*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 15:57	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~12~~ J	UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:26	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 19:17	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 19:17	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 19:17	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 19:17	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 19:17	10

Client Sample ID: SW-2_LANGAN

Lab Sample ID: 180-39575-19

Date Collected: 12/04/14 13:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:00	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:00	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:00	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:00	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:00	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:00	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:00	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:00	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:00	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 17:00	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:00	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:00	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:00	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:00	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:00	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:00	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/16/14 17:00	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:00	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 17:00	1

Client Sample ID: SW-2_LANGAN

Date Collected: 12/04/14 13:10
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-19

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:00	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:00	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:00	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:00	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/16/14 17:00	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:00	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:00	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:00	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 17:00	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:00	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:00	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:00	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:00	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:00	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/16/14 17:00	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:00	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:00	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:00	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:00	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:00	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*64 - 135*		*12/16/14 17:00*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 118*		*12/16/14 17:00*	*1*
Dibromofluoromethane (Surr)	*104*		*70 - 128*		*12/16/14 17:00*	*1*
Toluene-d8 (Surr)	*98*		*71 - 118*		*12/16/14 17:00*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 21:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*74*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
2-Fluorobiphenyl	*64*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
2-Fluorophenol	*52*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Nitrobenzene-d5	*59*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Phenol-d5	*54*		*30 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*
Terphenyl-d14	*68*		*10 - 150*	*12/10/14 08:26*	*12/11/14 21:37*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 16:49	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~14 J~~	UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:38	1

Client Sample ID: SW-2_LANGAN

Lab Sample ID: 180-39575-19

Date Collected: 12/04/14 13:10

Matrix: Water

Date Received: 12/05/14 18:40

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**86**		50	18	ug/L		12/09/14 15:47	12/10/14 19:50	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 19:50	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 19:50	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 19:50	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 19:50	10

Client Sample ID: SW-1_LANGAN

Lab Sample ID: 180-39575-20

Date Collected: 12/04/14 13:20

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 17:24	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 17:24	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 17:24	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 17:24	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 17:24	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 17:24	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 17:24	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 17:24	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 17:24	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 17:24	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 17:24	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 17:24	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 17:24	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 17:24	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 17:24	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 17:24	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/16/14 17:24	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 17:24	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 17:24	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 17:24	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 17:24	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 17:24	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/16/14 17:24	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 17:24	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 17:24	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 17:24	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 17:24	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 17:24	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 17:24	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 17:24	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 17:24	1

Client Sample ID: SW-1_LANGAN
Date Collected: 12/04/14 13:20
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-20
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 17:24	1
Methylene Chloride	ND	J	1.0	0.13	ug/L			12/16/14 17:24	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 17:24	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 17:24	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 17:24	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 17:24	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 17:24	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 17:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*95*		*64 - 135*		*12/16/14 17:24*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 118*		*12/16/14 17:24*	*1*
Dibromofluoromethane (Surr)	*106*		*70 - 128*		*12/16/14 17:24*	*1*
Toluene-d8 (Surr)	*105*		*71 - 118*		*12/16/14 17:24*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.93	0.051	ug/L		12/10/14 08:26	12/11/14 22:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*96*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
2-Fluorobiphenyl	*89*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
2-Fluorophenol	*67*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Nitrobenzene-d5	*78*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Phenol-d5	*70*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*
Terphenyl-d14	*81*		*10 - 150*	*12/10/14 08:26*	*12/11/14 22:01*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**75**		1.0	0.21	mg/L			12/22/14 17:06	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	50 ~~13~~ J	UB	50	5.0	ug/L		12/05/14 10:51	12/08/14 16:50	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	**81**		50	18	ug/L		12/09/14 15:47	12/10/14 20:12	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 20:12	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 20:12	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 20:12	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 20:12	10

Client Sample ID: FB120414
Date Collected: 12/04/14 14:40
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-21
Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/16/14 13:08	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/16/14 13:08	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/16/14 13:08	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/16/14 13:08	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/16/14 13:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/16/14 13:08	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/16/14 13:08	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/16/14 13:08	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/16/14 13:08	1
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/16/14 13:08	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/16/14 13:08	1
2-Hexanone	ND		5.0	0.16	ug/L			12/16/14 13:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/16/14 13:08	1
Acetone	ND		5.0	2.5	ug/L			12/16/14 13:08	1
Benzene	ND		1.0	0.11	ug/L			12/16/14 13:08	1
Bromoform	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Bromomethane	ND		1.0	0.31	ug/L			12/16/14 13:08	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/16/14 13:08	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Chloroethane	ND		1.0	0.21	ug/L			12/16/14 13:08	1
Chloroform	ND		1.0	0.17	ug/L			12/16/14 13:08	1
Chloromethane	ND		1.0	0.28	ug/L			12/16/14 13:08	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/16/14 13:08	1
cis-1,3-Dichloropropene	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Cyclohexane	ND		1.0	0.25	ug/L			12/16/14 13:08	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/16/14 13:08	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/16/14 13:08	1
Ethyl ether	ND		1.0	0.082	ug/L			12/16/14 13:08	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/16/14 13:08	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/16/14 13:08	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/16/14 13:08	1
Methyl acetate	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/16/14 13:08	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/16/14 13:08	1
Methylene Chloride	ND		1.0	0.13	ug/L			12/16/14 13:08	1
Styrene	ND		1.0	0.097	ug/L			12/16/14 13:08	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
Toluene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/16/14 13:08	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/16/14 13:08	1
Trichloroethene	ND		1.0	0.14	ug/L			12/16/14 13:08	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/16/14 13:08	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/16/14 13:08	1

Client Sample ID: FB120414

Lab Sample ID: 180-39575-21

Date Collected: 12/04/14 14:40

Matrix: Water

Date Received: 12/05/14 18:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*64 - 135*		*12/16/14 13:08*	*1*
4-Bromofluorobenzene (Surr)	*112*		*70 - 118*		*12/16/14 13:08*	*1*
Dibromofluoromethane (Surr)	*102*		*70 - 128*		*12/16/14 13:08*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/16/14 13:08*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	ND		0.96	0.053	ug/L		12/10/14 08:26	12/11/14 22:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*65*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
2-Fluorobiphenyl	*49*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
2-Fluorophenol	*40*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Nitrobenzene-d5	*48*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Phenol-d5	*41*		*30 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*
Terphenyl-d14	*66*		*10 - 150*	*12/10/14 08:26*	*12/11/14 22:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.21	mg/L			12/22/14 17:23	1

Method: 8315A - Carbonyl Compounds (HPLC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Formaldehyde	**5.0**	**J**	50	5.0	ug/L		12/05/14 10:51	12/08/14 17:01	1

Method: In-House - Sulfonic Acids by LCMS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Benzenedisulfonic acid	ND		50	18	ug/L		12/09/14 15:47	12/10/14 20:34	10
p-Phenolsulfonic acid	ND		50	8.4	ug/L		12/09/14 15:47	12/10/14 20:34	10
Benzenesulfonic acid	ND		50	7.0	ug/L		12/09/14 15:47	12/10/14 20:34	10
Resorcinol	ND		50	5.9	ug/L		12/09/14 15:47	12/10/14 20:34	10
2,3',4-Trihydroxydiphenyl	ND		50	16	ug/L		12/09/14 15:47	12/10/14 20:34	10

Client Sample ID: TRIP BLANK

Lab Sample ID: 180-39575-22

Date Collected: 12/04/14 00:00

Matrix: Water

Date Received: 12/05/14 18:40

Method: 8260C - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.29	ug/L			12/15/14 14:07	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		1.0	0.32	ug/L			12/15/14 14:07	1
1,1,2-Trichloroethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
1,1-Dichloroethane	ND		1.0	0.12	ug/L			12/15/14 14:07	1
1,1-Dichloroethene	ND		1.0	0.30	ug/L			12/15/14 14:07	1
1,2,4-Trichlorobenzene	ND		1.0	0.27	ug/L			12/15/14 14:07	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.14	ug/L			12/15/14 14:07	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
1,2-Dichloroethane	ND		1.0	0.21	ug/L			12/15/14 14:07	1
1,2-Dichloropropane	ND		1.0	0.095	ug/L			12/15/14 14:07	1
1,3-Dichlorobenzene	ND		1.0	0.11	ug/L			12/15/14 14:07	1

Client Sample ID: TRIP BLANK

Date Collected: 12/04/14 00:00
Date Received: 12/05/14 18:40

Lab Sample ID: 180-39575-22

Matrix: Water

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		1.0	0.21	ug/L			12/15/14 14:07	1
2-Butanone (MEK)	ND		5.0	0.55	ug/L			12/15/14 14:07	1
2-Hexanone	ND		5.0	0.16	ug/L			12/15/14 14:07	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.53	ug/L			12/15/14 14:07	1
Acetone	ND		5.0	2.5	ug/L			12/15/14 14:07	1
Benzene	ND		1.0	0.11	ug/L			12/15/14 14:07	1
Bromoform	ND		1.0	0.19	ug/L			12/15/14 14:07	1
Bromomethane	ND	J	1.0	0.31	ug/L			12/15/14 14:07	1
Carbon disulfide	ND		1.0	0.21	ug/L			12/15/14 14:07	1
Carbon tetrachloride	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chlorobenzene	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chlorodibromomethane	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Chloroethane	ND		1.0	0.21	ug/L			12/15/14 14:07	1
Chloroform	ND		1.0	0.17	ug/L			12/15/14 14:07	1
Chloromethane	**0.39**	**J**	1.0	0.28	ug/L			12/15/14 14:07	1
cis-1,2-Dichloroethene	ND		1.0	0.24	ug/L			12/15/14 14:07	1
cis-1,3-Dichloropropene	ND	J	1.0	0.19	ug/L			12/15/14 14:07	1
Cyclohexane	ND		1.0	0.25	ug/L			12/15/14 14:07	1
Dichlorobromomethane	ND		1.0	0.13	ug/L			12/15/14 14:07	1
Dichlorodifluoromethane	ND		1.0	0.19	ug/L			12/15/14 14:07	1
Ethyl ether	ND		1.0	0.082	ug/L			12/15/14 14:07	1
Ethylbenzene	ND		1.0	0.23	ug/L			12/15/14 14:07	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			12/15/14 14:07	1
Isopropylbenzene	ND		1.0	0.16	ug/L			12/15/14 14:07	1
Methyl acetate	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Methyl tert-butyl ether	ND		1.0	0.18	ug/L			12/15/14 14:07	1
Methylcyclohexane	ND		1.0	0.26	ug/L			12/15/14 14:07	1
Methylene Chloride	**0.63**	**J**	1.0	0.13	ug/L			12/15/14 14:07	1
Styrene	ND		1.0	0.097	ug/L			12/15/14 14:07	1
Tetrachloroethene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
Toluene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
trans-1,2-Dichloroethene	ND		1.0	0.17	ug/L			12/15/14 14:07	1
trans-1,3-Dichloropropene	ND		1.0	0.15	ug/L			12/15/14 14:07	1
Trichloroethene	ND		1.0	0.14	ug/L			12/15/14 14:07	1
Trichlorofluoromethane	ND		1.0	0.20	ug/L			12/15/14 14:07	1
Vinyl chloride	ND		1.0	0.23	ug/L			12/15/14 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*64 - 135*		*12/15/14 14:07*	*1*
4-Bromofluorobenzene (Surr)	*100*		*70 - 118*		*12/15/14 14:07*	*1*
Dibromofluoromethane (Surr)	*108*		*70 - 128*		*12/15/14 14:07*	*1*
Toluene-d8 (Surr)	*101*		*71 - 118*		*12/15/14 14:07*	*1*

Data Usability Reports

INDSPEC Petrolia

Data Usability Assessment

South Branch Bear Creek Sediments

September and December 2014 and January 2015 Sampling Events

Report Prepared by:

ARCADIS

Conestoga Rovers & Associates

June 2015

Contents

ACRONYMS

%R	percent recovery
BSA	benzene sulfonic acid
DQI	data quality indicator
m-BDSA	meta-benzenedisulfonic acid
MS	matrix spikes
MSD	matrix spike duplicate
PADEP	Pennsylvania Department of Environmental Protection
p-PSA	para-phenolsulfonic acid
QC	quality control
RL	reporting limit
RPD	relative percent difference
THD	2,4,3’-trihydroxydiphenyl
VOC	volatile organic compound
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

This report discusses the usability of chemistry data for sediments collected in September and December 2014 and January 2015 from South Branch Bear Creek in Petrolia, PA.

Beazer and INDSPEC entered into a Facility Lead Agreement with the Pennsylvania Department of Environmental Protection (PADEP) in 2004 for the Beazer/INDSPEC properties in Petrolia, PA. Beazer and INDSPEC have conducted site characterization and remediation activities in accordance with Pennsylvania's Land Recycling and Environmental Standards Act (Act 2) and the *Surface-Water/Sediment Sampling Work Plan* submitted to PADEP on May 1, 2014 and approved by PADEP in a May 27, 2014 e-mail from Ms. Nancy Duerring of PADEP to Mr. Mark Hanish of ARCADIS.

As part of the ongoing site work, sediments from the segment of the South Branch of Bear Creek that flows through the Site were collected and analyzed for the following constituents:

- Volatile organic compounds (VOCs) (United States Environmental Protection Agency [USEPA] 8260 List)
- Specialty compounds, including:
    - 2,4,3'-Trihydroxydiphenyl (THD)
    - Benzenesulfonic acid
    - meta-Benzenedisulfonic acid
    - para-Phenolsulfonic acid
    - Resorcinol
    - Formaldehyde
    - Phenol
    - Sulfate

Samples were analyzed by TestAmerica Laboratory in accordance with methods accredited by PADEP.

The sampling and analysis program was designed to characterize sediment conditions to support the Remedial Investigation. Data were validated to determine their quality with respect to method and program requirements. Although laboratory quality control measurements generally met method and laboratory criteria, significant problems were noted with the sediment samples themselves. Data have been rejected for resorcinol in all but one sample and for THD in all sediments. Despite additional laboratory efforts to achieve acceptable recoveries of these analytes, select constituents in sediment sample results were qualified as rejected (R) during validation and are, therefore, considered unusable. All other data were considered usable.

Data completeness for these sediment samples, including the full list of volatile organics, is 90%.

As an addendum to this usability assessment, information provided from additional work at TestAmerica Laboratory is presented.

1.0 Introduction

This data usability assessment covers data for the sediment samples collected in September and December 2014 and January 2015 from the South Branch Bear Creek as part of the ongoing Remedial Investigation of the site. Data usability has been evaluated for all constituents analyzed in sediment during these sampling events.

2.0 Program Objectives

As part of the ongoing Remedial Investigation activities, sediment samples from the segment of the South Branch of Bear Creek that flows through the Site were collected and analyzed. These analyses characterized overall sediment quality to support the Remedial Investigation.

The constituents analyzed during these sampling events included:

- VOCs (USEPA 8260 List)
- Specialty Compounds Including:
  - 2,4,3'-Trihydroxydiphenyl (THD)
  - Benzenesulfonic acid (BSA)
  - meta-Benzenedisulfonic acid (m-BDSA)
  - para-Phenolsulfonic acid (p-PSA)
  - Resorcinol
  - Formaldehyde
- Phenol
- Sulfate

Samples were analyzed by TestAmerica Laboratory in accordance with methods accredited by the Pennsylvania Department of Environmental Protection (PADEP) in accordance with Pennsylvania's Land Recycling and Environmental Standards Act (Act 2). The sampling was also performed in accordance with the *Surface-Water/Sediment Sampling Work Plan* submitted to PADEP on May 1, 2014 and approved by PADEP in a May 27, 2014 e-mail from Ms. Nancy Duerring of PADEP to Mr. Mark Hanish of ARCADIS.

Sampling and analyses, data validation, and data interpretation have generated sufficient data to document the absence or presence and concentrations of some but not all the constituents analyzed. This data usability assessment has been conducted to determine whether data are usable with respect to program objectives.

2.1 Samples

Sediment samples were collected for analysis of all the above-listed analytes, except for phenol, from three locations in the South Branch Bear Creek in September 2014, and then from the same locations in December 2014. Both sampling events also included collection of one field

duplicate for analyses for all parameters for four sediment samples each event. Samples were accompanied by trip and field blanks.

Subsequent to completion of the September 2014 sampling event, PADEP requested that Beazer/INDSPEC collect samples that included analysis of phenol. The December 2014 sampling event did include samples collected for phenol analysis, but due to laboratory error, the samples for phenol collected during that event were inadvertently not analyzed. Therefore, additional sediment samples were collected during a third sediment sampling (January 29, 2015), specifically and only for the analysis of phenol.

3.0 Analysis Methods

Analyses were conducted in accordance with standard USEPA methods and PADEP accredited methods, including:

- Volatile organics by SW-846 Method 8260B
- Phenol by SW-846 8270C
- Formaldehyde by SW-846 Method 8315
- Sulfate by USEPA Method 300.0
- Sulfonic acids, resorcinol, and THD by OR357A TestAmerica, LC/MS/MS

Samples were appropriately preserved. Samples collected for sulfonic acids, resorcinol, and THD analysis were frozen in the field immediately after collection and stored at the laboratory at -20 degrees Celsius until analysis, as required by the method.

4.0 Data Usability Assessment Elements

The data usability assessment considers whether the data met project quality objectives as they relate to decision making. Any deficiencies in the dataset, such as a failure to meet reporting limit (RL) objectives, evidence of bias significant to water quality limits, or rejection of individual data points, have been evaluated for their impact on usability. All analytical data, data validation qualifiers, and quality control (QC) results were evaluated to establish the confidence with which data could be used for decision making at the Site.

Data quality indicators (DQIs) are qualitative and quantitative measures of performance requirements for work performed. DQIs are expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity.

4.1 Precision

Precision is defined as the degree of agreement between or among independent, similar, or repeated measurements. Precision is expressed in terms of analytical variability. For this project, analytical variability was measured as the relative percent difference (RPD) between analytical laboratory duplicates and between matrix spikes (MS) and matrix spike duplicates (MSD). Sample collection variability, combined with analytical variability, was measured by the analyses of blind field duplicates.

With limited exceptions as detailed in Section 6, precision measurements were acceptable, falling within method or laboratory limits. None of the exceptions affects data usability for samples or target analytes.

4.2 Accuracy

Accuracy is defined as the degree of agreement between a measurement or observation and the known of “true” value. This is quantitatively expressed as the percent recovery (%R). For the purposes of this project, accuracy measurements included continuing calibration stability, and %Rs from laboratory spikes, MS, and surrogate compounds. Additional bias to accuracy from detections in blank samples was also evaluated.

With limited, minor exceptions, laboratory-based accuracy measurements, including blanks, calibrations, and laboratory spikes were acceptable. Sample-based accuracy measurements, including spike and surrogate recoveries, were acceptable for volatiles, sulfate, and formaldehyde; matrix effects did not affect accuracy for most sulfonic acid analytes; although, matrix effects did significantly limited accuracy for resorcinol and THD, as well as some of the sulfonic acid analytes.

4.3 Representativeness

Representativeness is a qualitative measure of the degree to which sample data accurately and precisely represent the environmental condition. The measure of representativeness is established by the rationale and development of the sampling and analysis approach and then reassessed during the data usability process.

Sampling and analytical methods followed established protocols to ensure that the sediments were representative for this portion of Bear Creek.

4.4 Comparability

Comparability is a qualitative term that expresses the confidence with which one dataset can be compared to another dataset obtained during parallel or previous investigations, to reference values (such as background), reference materials, and screening values. Comparability for this project was achieved by using standard techniques to collect representative samples and following analytical methods used for other environmental programs conducted under the direction or oversight of the USEPA and/or PADEP.

4.5 Sensitivity

Method sensitivity is defined as the degree to which any compound can be detected within specific confidence criteria. All laboratory RLs for this program were consistent with the RLs presented in the laboratory Quality Assurance Plans for TestAmerica. In addition, results for all analytes detected below the RLs but above the laboratory’s method detection limit were reported. It should be noted that all these trace level detections are qualified as estimated (J) because accuracy below the RL is not established.

4.6 Completeness

Completeness is defined as the percentage of usable data in the total data population generated. Usable data generally includes data that may be qualified for minor QC issues, but where potential bias does not impact the usability of the result with respect to the characterization of presence or absence of the analyte or affect decisions made versus criteria or action limits.

Data completeness for sediment samples varied significantly over the analyte classes.

5.0 Data Validation

Independent data validation for all results was completed by ARCADIS, Syracuse, New York. Data for organics analyses were reviewed in accordance with USEPA National Functional Guidelines of October 1999 as modified or applicable to the methods, using method requirements and professional judgment as criteria for qualification.

Data for sulfate were reviewed in accordance with USEPA National Functional Guidelines of July 2002 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

Qualifiers as defined in the cited guidance documents were appended to results to identify any deviations from criteria as specified in the methods or TestAmerica Laboratory Quality Assurance Plans. Validation for all analyses for all samples included review of holding times; instrument initial and continuing calibrations; recoveries of blank spikes, MS, and surrogate spikes if applicable; field duplicate and laboratory duplicate precision; retention times and target compound identifications for organic analyses; internal standard recoveries for organic analyses; and overall system performance. All analytical raw data associated with constituents of concern were reviewed for this validation.

ARCADIS provided detailed validation reports, which have been relied upon for this usability assessment. These reports detail all major and minor QC deficiencies, but do not include an overall usability or completeness assessment.

6.0 Data Usability Assessment

ARCADIS and Conestoga Rovers & Associates have reviewed the validation reports and data qualifiers applied to determine individual usability of all measurements and overall usability for the dataset.

Rejected data are by definition unusable; rejection of a result, whether reported as a detection or non-detection, indicates that the analysis failed to provide reliable evidence for the presence or absence of an analyte.

Qualified data are generally usable if the reason for the qualification and the potential bias to the result do not preclude an overall understanding of the presence or absence of the chemical or, secondarily for sediments for this project, preclude a general approximation of the concentration.

Usability determinations relative to standards or action limits take into account the magnitude of the potential bias and the closeness of the reported level to the standard or limit. For example, a result qualified as potentially biased low but still above a standard or limit can be used with confidence to demonstrate non-compliance with the standard. If a result with low bias is reported below the standard but within the range of the potential bias, it may not be usable to demonstrate compliance or non-compliance. Additionally, a result falling several times below any action limit or standard may be usable if the potential bias is minor in comparison to the difference between the result and the limit or standard. For analytes for which no standards are set, usability does not require as high a degree of accuracy around a specific concentration value.

6.1 Usable Data

Over 90% of all data collected during the sediment sampling program was useable. Only select specialty compounds data was not considered usable as outlined in Section 6.2.

6.2 Rejected Data

USEPA guidelines require rejection of data when calibration responses are unacceptably low or when an analyte is non-detect but recoveries of spikes fall below 10%.

The method for the analysis of the sulfonic acids, resorcinol, and THD requires that MS be prepared for all analytes in each sample. Recoveries of several of the sulfonic acids, resorcinol, and THD from the sediments did not meet the minimum requirement for usability. Data were rejected as listed below in the table below:

Sample	Event	Rejected Analytes
SED-101	September	THD, p-PSA, Resorcinol
	December	THD, Resorcinol (Resorcinol usable in field duplicate)
SED - 102	September	THD, Resorcinol
	December	THD, Resorcinol
SED-103	September	THD, Resorcinol
	December	THD, Resorcinol, Benzenesulfonic acid, m-BDSA, p-PSA, BSA

The laboratory blank spikes were acceptable, and TestAmerica Laboratory has a successful record for analyses of all these constituents in soils and sediments from other sample sets. The recovery failures for these sediments were problematic. The laboratory initially believed that interferences from interferents could be responsible, but attempts to clean the extracts with a hexane wash did not improve results. After the December 2014 recovery failures, the laboratory added spikes to sample extracts shortly before analysis (comparable to the post-digestion spikes performed during metals analysis). Recoveries of these were acceptable, demonstrating that the failures were not a result of interferences during instrumental analysis. It appears that

the analytes are being degraded or otherwise lost during the sample extraction step due to microbial action or other matrix issues not typical of the soils/sediments from the area.

6.3 Estimated Results for Detected and Non-Detect Analytes

Quantitative results for detected analytes may be qualified during validation as estimated for a number of reasons. The “J” qualifier appended to a result indicates that the analyte is confirmed present but the absolute amount should be considered an estimate.

Reporting limits for non-detect analytes may also be qualified as estimated. The “UJ” qualifier appended to a result indicates that within a known range of uncertainty, there is no evidence that the analyte is present, but that the exact detection or RL is not established by the data.

Data qualified as estimated in this set are considered usable for project purposes.

Data for this program were qualified as estimated for reasons, including the following:

- The measurement fell between the method RL and the laboratory’s method detection limit.
- Instrument drift as evidenced by percent relative standard deviation exceedances for initial calibrations or RPDs above the control limit for continuing calibrations. Results are not qualified for non-detections if the drift indicates increasing sensitivity.
- Recoveries of internal standards, surrogates, laboratory control spikes MS and/or MSDs fell outside the control limits but above a minimum limit as established in the method.

6.3.1 Volatile Organics

The most common reason for the J qualifier in sediments is the detection of trace levels of an analyte below the method RL. Trace levels of various volatile organic analytes detected in the sediments were qualified as estimated for this reason.

One internal standard in the September 2014 sample for volatile organics analysis of SED-102 fell below the control limit but above the limit for data rejection. No analytes associated with this internal standard were detected, but detection limits have been qualified as estimated (UJ) for the affected compounds.

Recoveries of several volatile organics in the MS/MSDs from SED-102 were above the control limit for both the September and December 2014 analyses; those detected have been qualified as estimated with potential high bias. 1,2,4-Trichlorobenzene recovery was below the limit in the MS in both sets, and bromoform and 1,1,2,2-tetrachloroethane were low in the December 2014 MS; none of these compounds were detected, but their detection limits have been qualified (UJ).

The continuing calibration for volatile organics associated with the December 2014 sediments demonstrated decreased sensitivity towards methyl acetate, while the trans-1,2-dichloroproane recoveries were low in the laboratory control sample. Neither was detected, and their detection limits have been qualified as estimated (UJ).

6.3.2 Sulfonic Acids, Resorcinol, THD

Recoveries from MS for the September 2014 samples of BSA in SED-101 and its field duplicate, p-PSA in SED-102, and m-BDSA and BSA in SED-103 fell below the control limit of 60% but were above the lower limit for acceptance. Results and RLs for these have been qualified as estimated (J, UJ).

The continuing calibration associated with the sediments in December 2014 demonstrated increasing sensitivity towards BSA, p-PSA, resorcinol, and THD. Those results not affected by MS recovery failures are qualified as estimated.

6.3.3 Phenol, Formaldehyde, and Sulfate

Formaldehyde recovered at less than 10% from the MS from SED-102 in December 2014. Formaldehyde was detected in the sample; therefore, the result has been qualified as estimated with potential low bias. Results for formaldehyde in SED-101 and its field duplicate in December 2014 differed (65% RPD) above the control limit of 50% RPD. Results for both are qualified as estimated.

Field duplicates for SED-101 for sulfate analysis in September 2014 also differed (68%) above the limit and results have been qualified.

6.4 Qualifications for Blank Detections

As analytical instrumentation has become more sensitive, detections of trace levels of analytes in field and laboratory blanks has become more common. This is especially true for a limited number of organic analytes that are frequently seen as laboratory background or susceptible to instrument carryover and when results are reported to the laboratory's detection limits rather than the method limits. When a target analyte is detected in a laboratory method blank, field, or trip blank, results in associated samples that fall within a factor of five times the blank level (10 times the blank for some common organics) are considered potential false positives. In accordance with USEPA guidelines, these results are qualified as non-detect due to blank contamination (UB). Results reported below the method RL are qualified to be non-detect (UB) at the RL. Results reported above the method RL but below 5 (or 10) times the blank are qualified to be non-detect (UB) at the level noted.

Acetone was detected in the trip blank for the September 2014 sediment samples. The trace level of acetone detected in SED-102 was qualified as non-detect at the RL (UB). Methylene chloride was detected in the method blanks associated with the December 2014 sediments. Sediment results were above the RL, but less than 10 times the blank concentration; results have been qualified as non-detect (UB) at the level measured in the sample.

7.0 Conclusions

Data usability for program objectives for the sediment samples collected in the South Branch of Bear Creek is dependent on the analyte class with 100% usability for VOCs, formaldehyde, and sulfate and less than 100% usability for the specialty compounds BSA, m-BDSA, p-PSA, resorcinol, and THD. Usability for the constituents is limited by losses during sample

preparation. The combined completeness of all constituents over the sampling events is summarized below:

- VOCs, formaldehyde, sulfate, and phenol: All data usable, 100% completeness.
- Benzenesulfonic acid, m-benzenedisulfonic acid:
    - All samples locations have at least one usable measurement data point (from either September or December 2014) that can be relied upon to characterize the presence and approximate concentration or the absence of BSA and m-BDSA.
    - Data for all samples collected in September 2014 and SED-101 and SED-102 in December 2014 are usable to confirm the presence or absence and approximate concentration of BSA and M-BDSA. December 2014 sample results for both analytes in SED-103 are rejected.
- p-Phenolsulfonic acid:
    - All locations have at least one data point (from either September or December 2014) that can be relied upon to characterize the presence and approximate concentration or the absence of p-PSA.
    - Results for the September analysis of SED-101 and the December analysis of SED-103 were rejected.
- Resorcinol:
    - The December 2014 analysis of the field duplicate for SED-101 is usable to confirm the absence of resorcinol at the estimated limit.
    - All other resorcinol data were rejected due to losses of spiked resorcinol during preparation.
- THD
    - All measurements rejected due to losses of spiked TDH during preparation. The presence or absence of this analyte in sediments cannot be confirmed. No data are usable.

Matrix issues appear to preclude analysis of sediments from this segment of the South Branch of Bear Creek for THD and resorcinol. These issues also affect the sulfonic acids, making spike recoveries variable and sometimes unacceptable. Laboratory performance of the method, as demonstrated by calibrations, blank spike recoveries, and post-preparation spike recoveries, was acceptable.

ADDENDUM

Additional Laboratory Investigations

The recovery failures for MS of resorcinol and THD from the South Branch of Bear Creek sediments collected in September 2014 prompted efforts to identify the causes and potential corrective steps that would allow the generation of valid data for these analytes. While the method was originally developed by Exygen Laboratories in the early 2000s and validated for waters, extraction of soils and sediments by shaking has historically provided usable data for these media as well.

Potential causes considered for the recovery failures include the following:

- interferences from other chemicals in the sediments
- strong adsorption onto the sediment particles
- losses due to microbial action.

Data for THD are very limited, but resorcinol is expected to have low adsorption and high mobility in sediments, with biodegradation expected to be an important fate process. The half-life for resorcinol has been reported as 3.7 to 5.8 hours in acclimated sludges.[1] THD shares structural similarities with resorcinol, but data for its tendency to adsorb onto sediment or to biodegrade have not been reported.

Sediment samples from September 2014 were spiked and re-extracted to assess whether chemical interferences, if present, could be removed. One portion from each extract was washed with hexane, which would be expected to remove a wide range of organics, including petroleum hydrocarbons, greases, biogenic materials, and synthetic organic chemicals. Recoveries of spikes were not improved by the hexane wash. If chemical interferences were responsible, the hexane wash would likely have removed them.

For the December 2014 samples, TestAmerica Laboratory diluted the sample extracts to reduce the impact of any interferences on the instrumental analysis. Test America increased the spiking level so that spiked resorcinol and THD would be detectable after dilution and then analyzed the samples at two levels of dilution. While this approach raised RLs for resorcinol and THD, RLs for the sulfonic acids were not affected. Recoveries were again unacceptable for resorcinol and THD in all sediments and for all analytes in one sediment sample.

As a final step to evaluate the potential effect of interferences on the analysis, sample extracts were spiked and analyzed directly. The spikes in this experiment did not contact sediment or experience the prolonged shaking period of the method for sediment preparation. All resorcinol and THD post-spikes were recovered within the method control limits. This result indicates that interferences in the extracts or analytical difficulties are not responsible for the recovery failures.

Within the structure and requirements of the PADEP-approved method, no other modifications to the analysis were considered applicable.

[1]. Hazardous Substance Data Base. NIH US National Library of Medicine http://toxnet.nlm.nih.gov/. Accessed 02/2015

INDSPEC Petrolia

Data Usability Assessment

South Branch Bear Creek Surface Waters

September 2014 and December 2014 Sampling Events

Report Prepared by:

ARCADIS

Conestoga Rovers & Associates

June 2015

Contents

ACRONYMS

%RSD	percent relative standard deviation
BSA	benzene sulfonic acid
DQI	data quality indicator
MS	matrix spike
MSD	matrix spike duplicate
PADEP	Pennsylvania Department of Environmental Protection
p-PSA	para-phenolsulfonic acid
QC	quality control
RL	reporting limit
RPD	relative percent difference
THD	2,4,3’-trihydroxydiphenyl
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report supports the usability of chemistry data for surface waters collected in September and December 2014 from the South Branch of Bear Creek in Petrolia, PA.

Beazer and INDSPEC entered into a Facility Lead Agreement with the Pennsylvania Department of Environmental Protection (PADEP) in 2004 for the Beazer/INDSPEC properties in Petrolia, PA. Beazer and INDSPEC have conducted site characterization and remediation activities in accordance with Pennsylvania's Land Recycling and Environmental Standards Act (Act 2) and the *Surface-Water/Sediment Sampling Work Plan* submitted to PADEP on May 1, 2014 and approved by PADEP in a May 27, 2014 e-mail from Ms. Nancy Duerring of PADEP to Mr. Mark Hanish of ARCADIS.

As part of the ongoing site work, two sets of surface-water samples from the segment of the South Branch of Bear Creek that flows through the Site were collected and analyzed for the following constituents:

- Volatile organic compounds (United States Environmental Protection Agency 8260 List)
- Specialty compounds, including:
    - 2,4,3'-Trihydroxydiphenyl
    - Benzenesulfonic acid
    - meta-Benzenedisulfonic acid
    - para-Phenolsulfonic acid
    - Resorcinol
    - Formaldehyde
- Phenol
- Sulfate

Samples were analyzed by TestAmerica Laboratory in accordance with methods accredited by PADEP.

The sampling and analysis program was designed to provide defensible data to support the Remedial Investigation. Data were validated to determine their quality with respect to method and program requirements. With minor exceptions that resulted in some data and reporting limits qualified as estimated, quality control measurements met method and laboratory criteria. No data were rejected and no qualifications applied preclude comparison to limits or standards.

Data completeness for these surface-water samples is 100%. Results demonstrate compliance with applicable standards.

1.0 Introduction

This data usability assessment covers data for the surface-water samples collected in September and December 2014 from the South Branch of Bear Creek as part of the ongoing Remedial Investigation of the Site. Data usability has been evaluated and evaluated for all constituents analyzed in surface-water samples during these sampling events.

2.0 Program Objectives

As part of the ongoing Remedial Investigation activities, surface-water samples from the segment of the South Branch of Bear Creek that flows through the Site were collected and analyzed to support the Remedial Investigation. Analyses were conducted to characterize overall water quality and to compare concentrations with available water quality standards, as presented in Table 1.

The constituents analyzed during these sampling events included:

- Volatile organic compounds (United States Environmental Protection Agency [USEPA] 8260 List)
- Specialty compounds, including:
    - 2,4,3'-Trihydroxydiphenyl (THD)
    - Benzenesulfonic acid (BSA)
    - meta-Benzenedisulfonic acid
    - para-Phenolsulfonic acid (p-PSA)
    - Resorcinol
    - Formaldehyde
- Phenol
- Sulfate

Samples were analyzed by TestAmerica Laboratory in accordance with methods accredited by the Pennsylvania Department of Environmental Protection (PADEP). All sampling and analyses were conducted in accordance with Pennsylvania's Land Recycling and Environmental Standards Act (Act 2). The sampling was also performed in accordance with the *Surface-Water/Sediment Sampling Work Plan* submitted to PADEP on May 1, 2014 and approved by PADEP in a May 27, 2014 e-mail from Ms. Nancy Duerring of PADEP to Mr. Mark Hanish of ARCADIS.

Sampling and analyses, data validation, and data interpretation have generated sufficient data to document the absence or presence and concentrations of the constituents. This data usability assessment has been conducted to determine whether data are usable with respect to program objectives and can be compared to applicable standards with confidence.

2.1 Samples

Surface-water samples were collected from 15 locations in the South Branch of Bear Creek in September 2014, and then from the same locations in December 2014. Both sampling events also included collection of one field duplicate for analyses for all parameters for 16 surface-water samples each event. Samples were accompanied by trip and field blanks.

Subsequent to completion of the September 2014 sampling event, PADEP requested that Beazer/INDSPEC collect samples that included analysis of phenol. The December 2014 sampling event did include samples collected for phenol analysis.

3.0 Analysis Methods

Analyses were conducted in accordance with standard USEPA methods and PADEP-accredited methods, including:

- VOCs by SW-846 Method 8260B
- Phenol by SW-846 8270C
- Formaldehyde by SW-846 Method 8315
- Sulfate by USEPA Method 300.0
- Sulfonic acids, resorcinol, and THD by OR357A TestAmerica Laboratory, LC/MS/MS

Samples were appropriately preserved. Samples collected for sulfonic acid, resorcinol, and THD analysis were frozen in the field immediately after collection and stored at the laboratory at -20 degrees Celsius until analysis, as required by the method.

4.0 Data Usability Assessment Elements

The data usability assessment considers whether the data meet project quality objectives as they relate to decision making. Any deficiencies in the dataset, such as a failure to meet reporting limit (RL) objectives, evidence of bias significant to water quality limits, or rejection of individual data points, have been evaluated for their impact on usability. All analytical data, data validation qualifiers, and quality control (QC) results were evaluated to establish the confidence with which data could be used for decision making at the Site.

Data quality indicators (DQIs) are qualitative and quantitative measures of performance requirements for work performed. DQIs are expressed in terms of precision, accuracy, representativeness, comparability, completeness, and sensitivity.

4.1 Precision

Precision is defined as the degree of agreement between or among independent, similar, or repeated measurements. Precision is expressed in terms of analytical variability. For this project, analytical variability was measured as the relative percent difference (RPD) between analytical laboratory duplicates and between matrix spikes (MS) and matrix spike duplicates (MSDs). Sample collection variability, combined with analytical variability, was measured by the analyses of blind field duplicates.

With limited exceptions as detailed in Section 6.0, precision measurements were acceptable, falling within method or laboratory limits. None of the exceptions affects data usability for samples or target analytes.

4.2 Accuracy

Accuracy is defined as the degree of agreement between a measurement or observation and the known of “true” value. This is quantitatively expressed as the percent recovery (%R). For the purposes of this project, accuracy measurements included continuing calibration stability, percent recoveries from laboratory spikes, MS, and surrogate compounds. Additional bias to accuracy from detections in blank samples was also evaluated.

With limited, minor exceptions as detailed in Section 6.0, accuracy objectives were satisfied for all analyses. None of the minor deficiencies noted affect data usability for samples or target analytes.

4.3 Representativeness

Representativeness is a qualitative measure of the degree to which sample data accurately and precisely represent the environmental condition. The measure of representativeness is established by the rationale and development of the sampling and analysis approach, and then reassessed during the data usability process.

Sampling locations were selected to represent stream surface-water conditions within the Act 2 site boundary, with additional samples taken upstream and downstream. Sampling and analytical methods followed established protocols to ensure that the surface waters were representative of the stream.

4.4 Comparability

Comparability is a qualitative term that expresses the confidence with which one dataset can be compared to another dataset obtained during parallel or previous investigations, to reference values (such as background), reference materials, and screening values. Comparability for this project was achieved by using standard techniques to collect representative samples and following analytical methods used for other environmental programs conducted under the direction or oversight of the USEPA and/or PADEP.

4.5 Sensitivity

Method sensitivity is defined as the degree to which any compound can be detected within specific confidence criteria. All laboratory RLs for this program were consistent with the RLs presented in the laboratory Quality Assurance Plans for TestAmerica Laboratory. In addition, results for all analytes detected below the RLs but above the laboratory’s method detection limit were reported. It should be noted that all these trace level detections are qualified as estimated (J) because accuracy below the RL is not established.

4.6 Completeness

Completeness is defined as the percentage of usable data in the total data population generated. Usable data generally includes data that may be qualified for minor QC issues but where potential bias does not impact the usability of the result with respect to the characterization of presence or absence of the analyte or affect decisions made versus criteria or action limits.

5.0 Data Validation

Independent data validation for all results was completed by ARCADIS, Syracuse, New York. Data for organics analyses were reviewed in accordance with USEPA National Functional Guidelines of October 1999 as modified or applicable to the methods, using method requirements and professional judgment as criteria for qualification.

Data for sulfate were reviewed in accordance with USEPA National Functional Guidelines of July 2002 as modified or applicable to the method, using method requirements and professional judgment as criteria for qualification.

Qualifiers as defined in the cited guidance documents were appended to results to identify any deviations from criteria as specified in the methods or TestAmerica Laboratory Quality Assurance Plans. Validation for all analyses for all samples included review of holding times. Instrument initial and continuing calibrations; recoveries of blank spikes, MS, and surrogate spikes if applicable; field duplicate and laboratory duplicate precision; retention times and target compound identifications for organic analyses; internal standard recoveries for organic analyses; and overall system performance. Only analytical raw data associated with constituents of concern were reviewed for this validation.

ARCADIS provided detailed validation reports that have been relied upon for this usability assessment. These reports detail all major and minor QC deficiencies, but do not include an overall usability or completeness assessment.

6.0 Data Usability Assessment

ARCADIS and Conestoga Rovers & Associates have reviewed the validation reports and data qualifiers applied to determine individual usability of all measurements and overall usability for the dataset.

Rejected data are by definition unusable; rejection of a result whether reported as a detection or non-detect, indicates that the analysis failed to provide reliable evidence for the presence or absence of an analyte. No data from these two sets of surface-water samples were rejected.

Qualified data are generally usable if the reason for the qualification and the potential bias to the result do not preclude an overall understanding of the presence or absence of the chemical or, secondarily for this project, preclude a meaningful comparison to an action level or regulatory standard. The data usability determination for this program includes a comparison of results and potential bias of the analytes relative to standards as listed in Table 1.

Usability determinations relative to these standards or action limits take into account the magnitude of the potential bias and the closeness of the reported level to the standard or limit. For example, a result qualified as potentially biased low but still above a standard or limit can be used with confidence to demonstrate non-compliance with the standard. If a result with low bias is reported below the standard but within the range of the potential bias, it may not be usable to demonstrate compliance or non-compliance. Additionally, a result falling several times below any action limit or standard may be usable if the potential bias is minor in comparison to the difference between the result and the limit or standard.

6.1 Rejected Results

USEPA guidelines require rejection of data when calibration responses are unacceptably low or when an analyte is non-detect but recoveries of spikes fall below 10%.

No results for the surface-water samples were rejected.

6.2 Estimated Results for Detected and Non-Detect Analytes

Quantitative results for detected analytes may be qualified during validation as estimated for a number of reasons. The “J” qualifier appended to a result indicates that the analyte is confirmed present but the absolute amount should be considered an estimate.

RLs for non-detect analytes may also be qualified as estimated. The “UJ” qualifier appended to a result indicates that within a known range of uncertainty, there is no evidence that the analyte is present but that the exact detection or RL is not established by the data.

Data for this program were qualified as estimated for reasons including the following:

- The measurement fell between the method RL and the laboratory’s method detection limit.
- Instrument drift as evidenced by percent relative standard deviation (%RSD) exceedances for initial calibrations or RPDs above the control limit for continuing calibrations
- Recoveries of MS and/or MSDs fell outside the control limits but above a minimum limit as established in the method.
- Holding time exceedances for the sample.

The most common reason for the J qualifier in surface waters is the detection of trace levels of an analyte below the method RL. A total of 67 data points fall into this category, primarily trace levels of various volatile organic analytes.

Variability in the response to methylene chloride during the initial calibration (18%RSD in September 2014, 20%RSD in December vs. method limit of 15%) resulted in qualifications to the RLs (UJ) for all September and the six December 2014 samples. The %RSD for cis-1,3-dichloropropane in the calibration associated with the December 2014 samples was 16%; this analyte was not detected but the RL for these samples is qualified as estimated (UJ). A slight decrease in sensitivity towards bromomethane (%D of 25.9 and 20.5% vs control limit of 20%) was noted in the continuing calibrations for bromomethane during the analyses of December 2014 samples, and the RLs for this analyte in six samples have been qualified. Methylene

chloride, bromomethane, and cis-1,3-dichloropropane were not detected in any water samples and the minor bias associated with these calibration deficiencies does not limit data usability.

Recoveries of several of the sulfonic acids, resorcinol, and THD analytes in the MS of the September 2014 samples were above control limits in samples where these analytes were not detected. Data are not qualified for these exceedances. Recoveries of resorcinol in SW-5 Langan (58%), BSA in SW-2 Langan (58%), SG-2(56%), SG-6 (58%), and SH-1 (59%) fell below the laboratory limit of 60%. The affected analytes were not detected in these samples; RLs have been qualified as estimated (UJ) but data usability is not limited by these minor deficiencies in spike recovery. All MS recoveries for resorcinol and BSA in the December 2014 waters fell within the control limits.

Recovery of p-PSA from the MS of the field duplicate of SG-3 was above the control limit, and the sample result has been qualified as estimated. It should be noted, however, that the result matched the SG-3 parent sample with 0% difference.

Formaldehyde analyses were conducted 1 day past the method holding time for four of the September 2014 samples, but within holding time for the December 2014 samples. Detections for all samples were significantly below the RL and qualified as estimated for that reason, but detections for these four samples are additionally qualified as estimated due to the exeedance.

6.3 Qualifications for Blank Detections

As analytical instrumentation has become more sensitive, detections of trace levels of analytes in field and laboratory blanks has become more common. This is especially true for a limited number of organic analytes that are frequently seen as laboratory background or susceptible to instrument carryover and when results are reported to the laboratory's detection limits rather than the method limits. When a target analyte is detected in a laboratory method blank, field, or trip blank, results in associated samples that fall within a factor of five times the blank level (10 times the blank for some common organics) are considered potential false positives. In accordance with USEPA guidelines, these results are qualified as non-detect due to blank contamination (UB). Results reported below the method RL are qualified to be non-detect (UB) at the RL. Results reported above the method RL but below 5 (or 10) times the blank are qualified to be non-detect (UB) at the level noted.

Formaldehyde was detected in the equipment blank associated with the December 2014 water samples. All sample results were initially below the RL but have been qualified to be non-detect at the RL (UB).

Acetone was detected in the trip blank associated with the September 2014 samples. All sample results fell within the action limit and have been qualified to be non-detect (UB).

7.0 Conclusions

Data usability for program objectives for the surface-water samples collected in the South Branch of Bear Creek is 100%. Presence or absence of constituents has been confirmed for all analytes. Quantitative results for constituent measurements are supported by QC measures that, with minor exceptions, met method and laboratory requirements.

Quantitative results demonstrate compliance/non-compliance with standards and regulatory limits within an acceptable range of accuracy.

Table 1: Applicable Water Quality Standards for Beazer/INDSPEC Site, Petrolia, PA

Beazer/INDSPEC Site Constituents	PAWQS-CCC µg/L	PAWQS-CMC µg/L	PAWQS-HHC µg/L	Maximum Surface Water Detection 2014 µg/L
Benzene	130	640	1.2	0.28 J
2,3',4-Trihydroxydiphenyl	- -	- -	- -	ND (50 U)
Benzenesulfonic acid	1,200,000	2,000,000	- -	54
Formaldehyde	440	2,200	700	15 J
m-Benzenedisulfonic acid	1,600,000	2,600,000	- -	3,700
p-Phenolsulfonic acid	1,400,000	3,500,000	- -	550
Resorcinol	7,200	28,000	2,700	540
Phenol	- -	- -	- -	ND (0.51 U)
Sulfate	- -	- -	- -	100

Notes:
- - = not analyzed
CCC = Criteria Continuous Concentration
CMC = Criteria Maximum Concentration
HHC = Human Health Criteria
J = estimated value
ND = non-detect
PAWQS = Pennsylvania Water Quality Standard
µg/L = micrograms per liter
UJ = non-detect, estimated detection limit